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VOL. XXVIII.

THE UTERINE MYOMA AS A COMPLICATION IN PREGNANCY; WITH REPORT OF TWO CASES OF CÆSAREAN HYSTERECTOMY.*

BY J. EMMONS BRIGGS, M. D.

Surgeon and Obstetrician at Massachusetts Homeopathic Hospital.

Nature doubtless intended pregnancy and delivery to be an uncomplicated physiological process, but, if so, her scheme has woefully miscarried, and even the knowledge of conception brings with it apprehensions which last until after confinement.

Many are the complications which may arise during pregnancy; some so severe as to threaten life before the expiration of the period of gestation; others equally severe present themselves during labor, and are so formidable that the highest grade of skill is required to combat them.

In this brief paper I shall have occasion to mention only one, viz., the uterine myoma as a complication in pregnancy.

In the treatment of this subject it is not my intention to burden you with statistical figures nor to cite opinions of learned authorities. All these are on record, and anyone desirous of information may read to his heart's content. But I

* Read before the Massachusetts Homeopathic Medical Society, October 11, 1905.

purpose, rather, to give you the benefit of a bit of experience gained during the summer in the treatment of two cases of uterine fibroid complicated by pregnancy, with some remarks upon the subject in general.

We have all of us seen cases of uterine fibroid concurrent with pregnancy. Frequently its presence is not suspected until pregnancy is well advanced, when the patient's attention is called to a bunch which she has not detected, occupying the lower abdomen. The attention of the physician is then directed to the tumor by the request of the patient, or, as more frequently happens, the physician in palpating the abdomen in his routine obstetrical examination comes upon such a tumor and readily diagnoses it as a fibroid. The enlarged uterus elevates the fundus of the womb out of the pelvis and brings it into close apposition to the abdominal wall. When the patient is thin it is not only easily palpated but often distinctly seen as a projection. If the tumor is pedunculated, it is movable within restrained limitations; if incorporated within the uterine wall, a well-rounded hard tumor, usually presenting a smooth surface, not unlike a child's head, may be felt. If in making a vaginal examination the head is found occupying the cervical end of the uterus and the tumor under consideration is made out as a projection from the fundus of the uterus, the diagnosis is not difficult excepting in twin pregnancy.

Frequently a history of more than ordinary flowing at menstrual periods preceding the period of gestation is elicited.

In another class of cases the patient may be aware of the presence of a fibroid before conception, and this knowledge may occasion much apprehension when pregnancy takes place.

The question of interest to the obstetrician is not so much the size as it is the position of the tumor, or, in other words, will it prove obstructive during delivery?

There are other important complications which must be given due consideration. Among them may be mentioned post-partum hemorrhage, and uterine rupture.

About two years ago a patient of mine having a fibroid of moderate size suffered from a very alarming hemorrhage immediately following delivery. Fortunately fatality was averted by firm pressure over the uterus and hot intra-uterine douches. My colleague, Dr. W. F. Wesselhoeft, has promised to relate his experience along this line.

The uterine myoma is frequently the cause of great suffering during the period of gestation by pressure upon the nerves of lower extremities and interference with the circulation, often producing edema and severe circulatory disturbances. Pressure of the tumor upon the bladder is cause of much pain and difficulty in urination, while the encroachment upon the rectum may cause difficulty in defecation.

It is a well-recognized fact that pregnancy accelerates the growth of a fibroid, probably by an augmentation of the blood supply, and often brings about a softening of the tumor by fatty degeneration.

Thus far we have considered only the subperitoneal and interstitial variety of uterine fibroma, which are doubtless by far the most formidable. The submucous fibroid is usually pushed out of the cervical canal in advance of the fetus when it is recognized and its pedicle severed.

After enumerating the inconveniences and dangers of a fibroid tumor in connection with pregnancy let us next discuss the advisability of permitting a woman with a uterine myoma to go to full term and delivery.

This question can only be answered after carefully considering two important points, viz., the size and location of the tumor. It may be said to be comparatively safe to allow a woman to go to term who has a myoma of even considerable size, if situated in the fundus of the womb. If pedunculated her only danger would be a twisting of the pedicle with strangulation, a condition which I consider to be rare, although to be found in current literature on the subject, and recently occurring in the experience of my colleague, Dr. B. T. Church of Winchester.

Dr. Church reports the case as follows:

Mrs. W., aged thirty-seven, Irish. Was in the midst of her sixth confinement when he was called in consultation by her family physician. He found on examination a tumor lying across the abdomen and a second presenting in front of the head. The abdominal tumor gave the impression of being a fetal head, but soon she was delivered of a ten-pound baby, and the tumor remaining, a diagnosis of uterine myoma was positive.

This same patient presented herself to Dr. Church again last fall, about three months pregnant. He found on examination

a fibroid about the size of a lemon in the fundus of the womb, freely movable. He heard nothing of the case until he was called in consultation by the attending physician during her seventh confinement. This time it was a breech presentation, but otherwise normal. The delivery was comparatively easy and not protracted. She did well for a day or so, when on the third day, he was again called in and found her temperature to be 104, with pulse 140; chills and great abdominal pain. Vaginal discharge normal, but persistent regurgitant vomiting of coffee-grounds material. He urged immediate operation and her attending physician had her sent to the Massachusetts General Hospital.

On abdominal section it was found that she was suffering from a strangulation of the fibroid tumor before mentioned. Its blood supply had been cut off at the time of delivery, resulting in extensive sloughing with peritonitis. She was exceedingly ill for a long time after the operation, but finally made a satisfactory convalescence.

Dr. Church informs me that he did not personally witness the operation but gives the details as reported to him.

If the tumor is interstitial, hemorrhage may occur, but only as a rare exception would it be fatal. Should extensive fibrocystic changes in the uterus occur complicating pregnancy the danger would be great, as uterine distention would be liable to result in rupture with fatal hemorrhage.

A hard, unyielding fibroid tumor occupying the lower uterine segment, which, from its location, can be depended upon to obstruct the pelvic cavity and which cannot from its attachment rise above the pelvic brim, is a serious menace and demands operative interference. Such a tumor may be no larger than a hen's egg, yet form an insurmountable obstacle to normal delivery.

Obviously a larger interstitial myoma entirely filling the pelvis so that the fetus cannot enter the superior strait renders delivery quite impossible.

We come now to the practical consideration of the method of procedure in cases of fibroid tumor complicating pregnancy. Uterine myomata situated in the fundus of the uterus of moderate size may occasion some apprehension from hemorrhage, or if pedunculated from twisting of the pedicle, but the chances

are greatly in favor of a practically normal delivery and convalescence.

If situated low in the body of the uterus they should be treated surgically in one of the following ways: In the early months of pregnancy a myomectomy can be performed, and this has been successfully done in numerous recorded cases without terminating pregnancy. This method of treatment would seem adapted to the single tumor which can be readily enucleated. In case the tumor is of large size and is so located as to render delivery impossible a woman may be allowed to go to full term or nearly so, when Cæsarean hysterectomy can be done with an expectation of securing a living child and saving the patient's life.

The real purpose of this paper is to advance this method as the most desirable in large uterine myoma which would prove obstructive to delivery, and I can see no reason, judging from my own experience, why it is not perfectly feasible and altogether desirable.

In the first place we all believe in hysterectomy as the only rational method of treating a large fibroid when occurring during the early or middle part of a woman's child-bearing period. We know also that pregnancy accelerates the growth of a fibroid, so that the chances are that should a woman thus affected go to term and be delivered of the child she would fall into the surgeon's hand shortly afterwards for hysterectomy.

There remains now only one question to be answered: Which of two methods involves the greater risk, first, the attempt to deliver with all the attendant dangers, and later a hysterectomy; second, a Cæsarean hysterectomy at a selected time near the expiration of the normal period of gestation?

It is an accepted fact that nature fortifies the pregnant woman against loss of blood, shock, and sepsis. We often observe that during delivery a great quantity of blood is lost, enough to greatly imperil life at other occasions, without arousing the slightest inconvenience to the parturient woman. Such a loss of blood at delivery is considered normal, when if it occurred at any other time it would be an alarming hemorrhage.

There is no question about the increased tolerance of patients to mechanical procedures at this time—such as high forceps, dragging a large head through a small pelvis, turning,

mutilating operations, etc., are often completed without the patient's showing any signs of shock.

Would surgical wounds, however small, heal kindly under such unsanitary and septic conditions as exist in the homes of many of the indigent dispensary patients? I predict that the majority of surgical wounds made in these localities would suppurate; yet babies continue to be born and septic infections are surprisingly infrequent. We must therefore conclude that nature is especially well prepared to meet hemorrhage, shock and sepsis at the time of delivery.

Why not then perform the Cæsarean hysterectomy, deliver the child through the abdominal wound and proceed to remove the entire uterus with the fibroid tumor? My experience bears out this theory. Never before in my practice have I seen patients who have undergone hysterectomy show so little disturbance from the operation; no pallor of the face, no rise in pulse or temperature, surprisingly little abdominal pain, and convalescent from the start.

What shall be said in favor of this method of delivery from the point of view of the child? Compare, if you please, the lifting of the child tenderly from the incised womb of the mother, with the dangerous and forcible manipulation necessary to drag the child through a narrowed pelvic canal.

Finally, the condition appears to the writer something as follows: We have a woman suffering from a fibroid tumor which in itself demands hysterectomy. The woman is pregnant and if nature is allowed to complete the process she will be likely to be involved in some of the greatest dangers known to obstetrics and surgery. All these particular dangers can be guarded against and all the suffering of an abnormal delivery becomes an absolutely unnecessary experience. Cæsarean hysterectomy is the operation of choice, and in the hands of experienced operators is far safer in these cases than delivery per vaginam.

Case 1.—Mrs. L., aged 38. Patient of Dr. Thomas Hodgdon of Middleboro. Was seen by me first on March 29, 1905, and gave the following history: Menstruation ceased five months ago; always had been regular up to this time, but during the past few years had been somewhat excessive. Her abdomen began to increase in size two months ago, lately it has been quite rapid. Has been married seventeen years; never

pregnant. Her general health has always been good. During the past few weeks she has had considerable gas in the bowels, with indigestion and loss of appetite. There has been no abdominal pain and no nausea, but the breasts have been sore of late.

The result of the examination revealed vaginal mucous membrane blue and softened. A large, tense, smooth globular mass filled the pelvis, occupying all the left side and nearly all of the right. It was quite movable and extended two-thirds of the way to the umbilicus. On the right side a freely movable, irregular mass extended to the hypochondrium. There was some secretion in breasts. Diagnosis was made of probable pregnancy complicated with fibroid.

At this time I advised her to come in again in a month or so that we might be more positive of diagnosis. From the hospital records I see that she entered the hospital on May 1, 1905, at which time she was examined by Drs. Bell, W. F. Wesselhoeft and myself. At this time the previous diagnosis was confirmed, but it was thought best not to do anything then.

On May 16, the patient entered the hospital early in the morning with the membranes ruptured and the amniotic fluid escaping from her. It was now evident that something immediate must be done because with the membranes ruptured a fetus in the seventh month could not be delivered per vaginam.

By vaginal examination a fibroid tumor could be felt to entirely fill the pelvis, while lying above it in the fundus of the uterus the fetal structures were plainly felt.

A consultation with Drs. Bell and Wesselhoeft, who had previously seen the case with me, was held and we decided to perform a Cæsarean hysterectomy. Consequently I operated, assisted by Drs. Howard, Woodman and Calderwood, Dr. Haigis anesthetizing.

An opening was made through the abdominal wall, the incision commencing about two inches above the umbilicus, following the median line to the symphysis. The fundus of the uterus came into view and was incised parallel with the abdominal incision. Unfortunately the placenta was found to be overlying the fundus and my incision punctured it. The hand was immediately introduced and the placental attachments to the uterine wall severed. The child was delivered through the incised uterine fundus. I then proceeded to remove the uterus.

including the fibroid tumor, by a typical abdominal hysterectomy. The technique of the operation after the child was delivered did not differ in any particular from the ordinary total abdominal hysterectomy.

Dr. George H. Earl took charge of the baby, but as the child was at the eighth month and very poorly nourished, he succumbed after an hour.

The patient stood the operation, which was an hour and five minutes, exceptionally well; vomited little from the ether, ran a temperature for ten days between 99 and 100. Her wound healed by first intention throughout, and she was discharged from the hospital cured on the twenty-fifth day.

In closing the report of this case I wish to emphasize the very conspicuous absence of all alarming symptoms of every description. Her convalescence was rapid and satisfactory. She did not suffer at all from shock, pyrexia or vomiting, nor could a patient experience fewer annoying symptoms during convalescence from any abdominal operation.

Case II.—Mrs. R., aged forty-one. Had been seen by Drs. Bell and Wesselhoeft some months ago when a diagnosis of uterine fibroid, complicated by pregnancy, was made. As pregnancy was then well advanced it was thought best to wait until the child was viable, and then perform Cæsarean operation.

Patient entered the hospital on June 16, 1905, in order to be on hand should labor commence prematurely—on June 22d, by our computation, about one week before the period of normal delivery. In consultation with Drs. Bell, Wesselhoeft, Earl and Howard, we decided to perform Cæsarean hysterectomy. Consequently on June 22, 1905, I operated, assisted by Dr. Howard.

Made an incision through the abdominal wall and the anterior surface of the uterus. In this case the placenta was avoided. The child was given into the care of Dr. Chandler, who resuscitated it. After the delivery of the child and placenta the operation proceeded as a typical abdominal hysterectomy.

Patient left the operating table with pulse of 80. The highest experienced during her convalescence was 88. The highest temperature 100.2. Her wound healed throughout by first intention and she was discharged from the hospital on the twentieth day.

Further comment upon this case is unnecessary, but it demonstrated more conclusively than the first how little disturbance a patient may experience from an operation of severity at the termination of gestation.

THE SURGERY OF THE PROSTATE, AMERICAN
AND EUROPEAN METHODS COMPARED.*

BY HORACE PACKARD, M. D.,

Professor Surgery, Boston University.

Historical Review.—A brief glance at the history of prostatectomy is necessary to a comprehension of the present prevailing methods. The honors of priority in prostatic surgery are nearly equally divided between Europe and America.

Macgill of Leeds, England, began to make partial enucleation of the prostate through a suprapubic incision as early as 1886.

Bellfield of Chicago at about the same time made operation upon the prostate by the same route, but added thereto drainage by a perineal opening.

Evidently the work of Macgill and Bellfield made little impression upon the mass of the profession, for but very little progress was made in prostatic surgery in the next fourteen years. Sporadic attempts were made by one and another to relieve prostatic obstruction by an attack upon the prostate gland either by the perineal or suprapubic route, or both combined, or by castration and vasectomy (White) or the electrocautery incision (Bottinni).

Many surgeons refused altogether to operate on prostate cases, deeming the condition a hopeless one and holding a pessimistic view altogether of the present and future of prostatic surgery.

In 1894 Fuller claimed that he made complete suprapubic prostatectomy by enucleation, report of which appeared in the *Journal of Cutaneous and Genito-urinary Diseases* in June, 1895, entitled "Six Successive and Successful Cases of Prostatectomy." He made a longitudinal suprapubic opening, and with a pair of serrated scissors cut through the bladder wall at the posterior margin of the urethral aperture, then with the finger of one hand he made enucleation while pressing up the perineum with the fist of the other hand.

In August, 1900, Guiteras presented a paper entitled "The

* Presented to the Massachusetts Surgical and Gynecological Society, Boston, December, 1905.

Present Status of the Treatment of Prostatic Hypertrophy," in which he expressed his approval of Fuller's suprapubic method, but advised the introduction of the finger of one hand to the rectum to press the prostate forward while the finger of the other hand enucleated. There is no doubt but that this article announced to the world the essentials of the suprapubic operation which is being performed to-day all over Europe and is undergoing adoption in this country.

In June, 1901, Freyer of London reported four cases of total extirpation of the prostate by the suprapubic route, and according to a method which he called his own, and in which he still claims priority. The operation he described was a very simple one, consisting of a small longitudinal incision over the pubis, a rapid puncture through the wall of the bladder previously distended with water, and enucleation of the whole prostatic gland by the forefinger, unaided by any instrument, but helped by counter pressure of the other forefinger in the rectum.

Prostatectomy in America.—In the meantime Senn and Murphy of Chicago, Young of Baltimore, and Packard of Boston were busy working out a practical method of relieving prostatic obstruction by the perineal route. In 1900 there appeared an elaborate article from the pen of Murphy detailing perineal technic and history of cases. He states in his preamble that it appears to him that "suprapubic prostatectomy will in the future be reserved for cases of enormous hypertrophy or pedunculated middle lobe, with stone." He goes on to state (which, by the way, illustrates the vagueness of conception of the actual anatomical relation of the prostatic coverings as late as two years ago) "that he formerly made operation on the prostate by the suprapubic route, and enucleation or cauterization was accomplished by the aid of curved scissors, Kocher dissector, Volsella forceps, and the forefinger." "The middle lobe was easily enucleated, but enucleation of the lateral lobe was always a difficult, bloody, dark, and unsatisfactory procedure." I quote this passage to show that so recently as two years ago so progressive a surgeon as Murphy had not grasped or had not believed what Fuller and Guiteras has pointed out eight years before, and what Freyer had conclusively demonstrated two years before, viz., that total enucleation of the prostate could be made easily, quickly, and completely by the suprapubic route with but the minimum of loss of blood.

During all this, various exploitations were being made with the Bottini incision by Young, Guiteras, Bangs, Myer, Alexander, and others, only to be finally discarded as an unsatisfactory, blind, and inefficient method.

Notwithstanding the ever-increasing weight of testimony of the efficiency of enucleation by the suprapubic route, most American surgeons clung to the perineal operations, so that up to the beginning of this year (1905) there seemed to be almost a tacit agreement that partial or complete prostatectomy by the perineal route was the best method of procedure.

As late as May, 1903, the *Journal of Dermatology and Genito-urinary Diseases* published answers to a series of questions relating to prostatic hypertrophy. One question was "What is the operation of your choice, and why?" Of 36 American surgeons to whom the questions were sent, 12 had no settled conviction, 17 chose the perineal route, 2 the suprapubic, 2 the combined suprapubic and perineal, 1 the Bottini, and 2 gave no answer.

In 1903 the writer presented to this society an article upon perineal prostatectomy and reported seven successive and successful cases by a method in some respects new. Last April there appeared in the *Annals of Surgery* an article from the pen of Young detailing an operation essentially the same under the title of "Conservative Perineal Prostatectomy." In the same number of the *Annals of Surgery* L. S. Pilcher published an article entitled "The Choice of Operative Methods for the Removal of Hypertrophied Prostate." Since all his descriptive matter and illustrations relate to the perineal route, it can be concluded that his choice at that time was the perineal method. In the same number an article by Lilienthal and another by Wiener (they are associated in the Mt. Sinai Hospital) showed that they had imbibed the spirit of the Fuller-Freyer method of suprapubic prostatectomy, although no mention is made of the source of their inspiration. The details of technic are exactly those which I saw the past summer in Freyer's clinic in the St. Peter's Hospital, London.

The above is enough to show that up to this time prostatectomy by the perineal route was the favorite method in this country. Such variations therefrom as existed were mainly presented by Fuller, who had failed to make much impression upon his American colleagues, and Lilienthal and Wiener, who had

evidently in some way learned of Freyer's work and were not sufficiently biased to ignore it in practice even though they gave neither him nor Fuller due credit.

Prostatectomy in Europe.—Now let us glance for a moment at what had been going on in Europe at this time. At the time of my visit abroad four years ago I found but little interest among surgeons on the subject of prostatectomy. The leading surgeons, represented by Guyon of Paris, Kocher of Berne, Czerny of Heidelberg, and Bassini of Padua, looked rather askance upon it as an operative measure, were rarely performing it, and hardly approved of subjecting patients to the operation unless it was an absolute necessity through inability to pass the catheter. Hartmann of Paris was performing the operation in selected cases by the perineal route. Guyon's assistant was also doing some perineal prostatectomy. Freudenberg of Berlin was making the Bottini incision.

The year following (1902) Freyer reported 23 cases of his operation for total extirpation of the prostate by the suprapubic route. Apparently this report made very little impression upon his confrères. In 1903 he reported 32 more cases and in October, 1904, still another series of 57 cases. His results were so strikingly superior and claims so apparently extravagant that there was still a disinclination to take them seriously. Little by little, however, as his published literature became disseminated there was an awakening to the fact that he was doing what no one else had ever accomplished in the line of prostatic surgery. A summary of his work to that date, 1904, included report of patients varying from fifty-three to eighty-four years and the prostates removed weighing from $\frac{3}{4}$ oz. to $14\frac{1}{2}$ oz. In three of his 110 cases the prostatic complication proved to be carcinoma. Excluding the carcinomatous cases the total number was 107. He reported 97 recoveries, giving a mortality of about 9 per cent. This, in comparison with a death-rate of $33\frac{1}{2}$ per cent. by the perineal route reported in a statistical review by Sir William Thompson, struck a death-blow to perineal prostatectomy among European surgeons.

During my wanderings abroad this past summer (1905) I found all surgeons making suprapubic prostatectomy. Gerard of Geneva, in answer to my query, said: "Yes. I am making the suprapubic operation. It is the best method I have ever used."

Roux of Lausanne said: "My prostatic work is now *a la Freyer*. My patients all get well; at least, if the general condition is at all tolerable, without incontinence and without urinary fistula." Hartmann, who was performing prostatectomy four years before by the perineal route, said: "I think we have now got down to a permanent basis, and the operation for the future will be by the Fuller-Freyer method." In England I went to see Freyer, and was charmed with the simplicity of his operative technic and his frankness in detailing every step of the operation. In circulating among other surgeons in London I made inquiries as to their opinion of the Freyer method. In answer to my question, Mr. Carless of the King's College Hospital said: "We have a grand operation in Freyer's method of suprapubic prostatectomy." Fenwick of the London Hospital said: "I shall always think of prostatectomy in connection with the names of Bellfield, Macgill, Senn, and Gouley." "They were the pioneers and they deserve the credit." "Modifications in the operation for the removal of the prostate have been made by one and another."

"Freyer should have full credit, however, for his courage, boldness and aggression in making this operation by a method which he is convinced is the best and adhering to it, for by so doing he has shown us its value and has established prostatectomy upon a sound basis."

Fuller's Claims of Priority.—An interesting sidelight upon Freyer's work is afforded by an article which appeared in the April number of the *Annals of Surgery*, by Eugene Fuller, entitled "The Question of Priority in the Adoption of the Method of Total Enucleation, Suprapublically, of the Hypertrophied Prostate."

He goes on to say that Freyer learned of the operation which he is performing through a transitory visit of Guiteras to him in London, in which the latter described his (Fuller's) suprapubic operation and Guiteras' modification of it, namely, the use of the forefinger of one hand introduced to the rectum to press up the prostate while the other finger was in the bladder enucleating it. Thus Fuller claimed that Freyer used his methods without giving due credit therefor, and went on with the operations claiming the method as his own and original with him. To a disinterested observer the status of the matter seems to be as follows: Undoubtedly Freyer did get his first idea of supra-

pubic prostatectomy indirectly from Fuller. However perfectly Fuller may have developed it, he failed to impress upon the medical profession at large that his method was materially superior to any others. The opportunity arrived for this to be done, and Freyer happened to be the man to do it. He had at his command St. Peter's Hospital in London, a hospital founded exclusively for the treatment of bladder diseases of men. Naturally great numbers of prostatic cases came to the hospital, therefore he had the clinical material at hand to work upon. He went boldly at it and has continued undeviatingly for five years, filing a series of cases reaching the unparalleled number up to October of this year of 203 operations with a total mortality of 16, or less than 8 per cent. In his first 100 cases there were 10 deaths, or 10 per cent. In the last 103 cases there were 6 deaths, or less than 6 per cent. In the last 36 cases there was but one death, or mortality of 3 per cent.

The Future Outlook.—With such figures as these there can be no longer any question of the future method of operating for prostatic obstruction. Freyer's work has cleared away all doubt. To whom belongs the credit is of no import, except to those seeking fame in history, but it is a source of congratulation that a safe and simple method of dealing with this serious and painful malady has been established.

Freyer's Achievements.—Freyer has opened up to us a clearer comprehension of the anatomical arrangement of the prostate and its surroundings than we have ever before possessed.

Every surgeon has heretofore dwelt upon the desirability of saving the prostatic urethra and has warned against its removal by too rash or indiscriminate efforts while making prostatectomy. Freyer has taught us that the prostatic urethra is of no moment so far as the final results go, and that its total removal with the whole gland is good surgery.

In the past there have been no settled convictions or teachings about conducting the enucleation inside or outside the capsule of the gland.

Freyer unhesitatingly says use every precaution to make the enucleation outside the capsule, and warns against the use of scissors or other instruments to make the first entrance through the mucous membrane of the bladder covering the prostate, lest the capsule be thereby opened.

In suprapubic work most surgeons have heretofore made removal of projecting lobes only, such as a pedunculated middle lobe, circumscribed fibroid or adenomatous growths of the lateral lobes, by scissors, cutting forceps, or electric snare.

Freyer says such a course is accompanied by copious bleeding, does not remove the disease, retards or prevents repair, and is bad surgery.

The covering of the prostate has been but vaguely compre-

hended. Freyer tells us that the true capsule is a thin membrane covering the gland, capable of removal only by dissection, and that there is outside this capsule a second covering or sheath, derived from the recto-vesical fascia. The prostatic plexus of blood-vessels lies mainly between these two envelopes and in the tissues of the sheath, capillaries passing through to the gland tissue. Enucleation properly conducted takes the inner covering away with the gland, leaves the outer one intact, and is followed by little escape of blood because no large vessels are wounded. The outer covering or sheath remains intact and prevents infiltration of urine into the cellular tissues of the pelvis.

Conclusion.—Time and space will not permit a detailed description of Freyer's method of prostatectomy. It is enough to state that it probably represents the acme of perfection in prostatic operative work and will take its place among the established operations of surgery. To secure for the unfortunate sufferers from prostatic obstruction the best results there must be, however, a campaign of education of the laity. These cases all appeal first to the family physician, and it is upon him rests the responsibility of carrying conviction of the wisdom of early operation and the dangers of delay. There will be a mortality accompanying this operation as long as a vacillating policy is adhered to, but when the same feeling of confidence gets abroad about this as now exists regarding ovariectomy or appendectomy, there will be a mortality rate so low that no physician will hesitate to urge operation upon his prostatic cases before irreparable damage has been done by introducing him to catheter life and all its attendant evils of cystitis and pyelitis.

This method will probably go down to history as Freyer's operation.

History is a quixotic mistress. Crawford W. Long of Georgia was the first to use ether anesthesia in surgery, but the genius and boldness of William T. G. Morton were needed to impress upon the world its great value, and to Morton history has given the credit.

Eugene Fuller performed suprapubic total enucleation of the prostate, but the operation needed the genius and the perseverance of Freyer to show to the world its value and safety.

The operation is brief in its duration. The actual time consumed in the operative part of the work, that is, from the first incision to the delivery of the gland, varies from $3\frac{1}{2}$ to 9 or 10 minutes.

The operation can easily be done under nitrous-oxide anesthesia, thus obviating the disagreeable after-effects of ether. This is sometimes of considerable importance where the patient is an aged man and in a feeble condition.

There is ordinarily but very slight bleeding, which ceases almost at once after the prostate is removed.

There is perfect continence of urine after healing is complete, and the cure is a radical one.

The suprapubic opening is very small and always heals without leaving a fistulous opening.

Under these conditions, viz., great rapidity and safety of operation, and a minimum of mortality, patients will seek operation in the early progress of the disease, while heretofore they have combated it.

Discussion.

Dr. Blodgett: I have seen at the hospital quite a number of cases operated upon by Dr. Packard. We all remember when the Bottini operation was in vogue some cases got well and some did not. Next the perineal operation was a step in the right direction, but the results were not as good as we wanted. I think this operation is a long step on the way to the proper technique of getting rid of prostatic hypertrophy. By this method the drainage is very simple indeed; you can irrigate constantly if you wish without disturbing the patient at all, and that means that you can constantly keep fresh water flowing over the wound or keep the pus coming from the bladder so diluted that it does not produce any harm.

Another thing (where the patients are usually so old), there is very little shock. I think the first case I saw was twelve minutes from the beginning to the end of the operation. The patient came out from the gas before they got him washed up.

By this method nearly all the element of shock is removed, and the drainage afterward is perfectly simple. I cannot yet say from my own observation what the after-result is going to be.

Dr. May: I must express surprise at Dr. Packard's advocacy now of the suprapubic operation when but a few months ago he seemed to have perfected another operation, one which certainly did marvelously well for at least five patients of mine. The recoveries, while slow in one or two instances, were all perfect. This operation certainly sounds very simple, and it seems to me one which perhaps more of us will venture to attempt than the one which he formerly did with his new and ingenious instruments. I would like to ask if drainage by catheter or perineal drainage is ever resorted to.

Dr. Packard: Provision is made for the most abundant drainage. I think that is one of the chief features of the operation. A drainage tube of at least $\frac{1}{2}$ inch, or better $\frac{5}{8}$, interior diameter is placed in the suprapubic wound. A wick of gauze is put down to the floor of the bladder, so there is no question of the efficiency of the drainage. This is maintained for from two to four days, and after that cases which have not been previously afflicted with cystitis will go on of themselves without further tube drainage, by simply irrigating through the

suprapubic wound twice a day with boiled water or saline or boracic-acid solution. In cystitis cases, after the withdrawal of the large suprapubic tube, the introduction of a catheter twice a day to irrigate the bladder, or fastening a catheter into the urethra for a few days and irrigating through it, is a safe and wise procedure.

Dr. Whitmarsh: I am frank to say that it does not seem to me that thus far time enough has elapsed, nor have statistics yet been able, to show conclusively which method is the better. I cannot help feeling some regret that Dr. Packard is not to continue his perineal method and roll up his statistics sufficiently to compare with Freyer, thus to determine so far as mortality is concerned whether he would not be able to make just as good if not a better showing, because the test of the method will be, in the first place, the mortality. It does not do to compare Freyer's method, if he has had three times as much material, with the statistics of those who have done a considerably less number of operations. The second test will be the time required for convalescence, and what is the ultimate result to be? I doubt whether one or two or three years will always be sufficient to determine. Will Dr. Packard tell us whether he changed his method because of Freyer's claimed results or because of dissatisfaction with his own? These are practical questions, and I am interested simply.

I want to say that I have seen the suprapubic enucleation method done but once; I will not name the operator because the patient died about five weeks after the operation, septic conditions having supervened. At that time it seemed to me that the amount of force necessary to enucleate was non-surgical, and the natural route for prostatectomy to be the perineum, I mean, aside from the lesson of statistics. Of course the test will be the result, but from the theoretical side the perineum is the natural route.

Dr. Briggs: I have been operating for two or three years past by the perineal route entirely. I had read of Freyer's method. I had seen accounts of it, but it takes a practical demonstration of these different operations for one to fully appreciate them. I saw Dr. Packard operate upon two cases by this suprapubic method, following, as I think he does very closely, Freyer's method. I had performed quite a number of perineal prostatectomies, had become somewhat familiar with this operation, and had come to have some confidence in it, yet always considered it a difficult and exceedingly dangerous operation. Dr. Packard's demonstration of the suprapubic route convinced me the first time I saw it of its relative simplicity, and having seen him operate twice by this method I decided to try it, and I have in the hospital now a patient eighty-one years of age, operated upon over two weeks ago, who is making a splendid convalescence. I had operated before upon

patients who were well along in years, one seventy-nine, I think, by the perineal route, and I have had good results by both methods, but this method is far preferable to the perineal route. The drainage is perfect; you can irrigate all the time if you wish. The drainage tube is large and the opening is adequate. This patient upon whom I have just operated has had no rise in temperature. It was 99 degrees the first day and was 99 degrees and a fraction yesterday, never as high as 100 degrees, and the patient has been exceedingly comfortable.

Dr. Packard: One question asked is "why did I change my method?" I was sorry to change and should not have done so after all my work in trying to evolve a good method by the perineal route if I had not been convinced that I had found a better one. And why a better?

(1) The operation is brief. Enucleation by the suprapubic route is easily completed in ten minutes or less.

(2) There is very little loss of blood. The hemorrhage is surprisingly slight.

(3) The operation can be done under nitrous-oxide anesthesia, thus excluding all the unpleasant after-effects of ether or chloroform. (This, I think, is an American refinement, for I saw ether and chloroform only, used abroad. Since my return I have used nitrous-oxide in all but one of my cases and am profoundly impressed in its favor.)

(4) There is less mutilation by suprapubic enucleation and much less danger of wounding the rectum.

(5) The prostate is more easily reached with the forefinger by the suprapubic route.

(6) Patients have perfect continence, with no dribbling, and no urinary fistula. A suprapubic wound always heals completely (if the patient has any reparative power, if not he dies). A fistulous opening sometimes remains permanently after the perineal operation.

(7) This operation makes complete removal of the gland and is therefore a radical cure—no possibility of future urinary obstruction from that source.

(8) If stone is present it is discovered at once on opening the bladder and removed before the prostate is enucleated.

(9) Aged and feeble men make better recoveries. This, I think, is accounted for because of little loss of blood, the brevity of the operation, and the excellent drainage.

(10) Statistics so far as available show a larger per cent. of recoveries and better final results.

Someone asked "why there was so much hemorrhage in the earlier attempts at suprapubic prostatectomy." Because the prostate was only partly removed. Following complete enucleation the sheath contracts, much as the uterus does after parturition, thus constricting the blood-vessels and stopping the outflow of blood.

DANGERS IN CURETTING THE UTERUS.*

BY THOMAS E. CHANDLER, M. D.

That the title of this informal discussion is a fact and not a scare-head, I think all surgeons will agree. There are real dangers in curetting the uterus, and while, in the vast majority of cases, it can be classed as a minor operation, yet there are often times when it can assume the proportions of an operation of vast importance and consequences.

It is not my purpose to decry the operation of curettage as unnecessary. No one realizes the importance of it more than I. It is, however, an operation which should command much more respect than is usually accorded it. Not because of the difficulty of its performance, but more because of the dangers attending the latter. Some of the accidents of which I shall speak have not been the result of inexperience but rather the result of a careless attitude, for the time being, as regards the operation. Understand me in that I believe it is oftener much more dangerous not to curette than to do so. It only remains for us to have the proper degree of respect for that which we are attempting.

The cases which I shall cite have not all been personal cases of mine, but have all come under my personal observation.

The dangers attending curettage of the uterus may be divided into three different classes, as follows: dangers from sepsis, from lack of thoroughness, and from the use of over-much force.

Considering the first class, you well may ask me the meaning of dangers from sepsis in these days of asepsis. Sepsis of what? I mean that, in spite of our most perfect methods, there are still opportunities for infecting or for stirring up an already existing infection in some part of the sexual apparatus. True, instruments can be made absolutely sterile by boiling, and the hands may be eliminated as factors in carrying sepsis if gloves be worn. But the region of the vaginal orifice, the vagina, and the interior of the uterus can hardly be made sterile. The vulva in close proximity to the anus is very unclean. The vagina may be made practically sterile in the vast majority of

* Presented to the Massachusetts Surgical and Gynecological Society.

cases, but I doubt very much if it can be so cleansed as to fail to give a positive culture of some form of microbic life. If the endometrium be infected, we cannot sterilize it. So it seems to me that not even under the very best of conditions do we ever perform an absolutely aseptic curettage. One can hardly hope to pass an instrument into the uterine canal without its previously having come in contact with a surgically unclean surface, either upon the patient or upon the hand of the operator after he has touched the patient. That serious sequelæ do not occur oftener we may thank either the perfect drainage of the parts or the natural resisting powers of the patient—or both.

A young woman, married several years and childless, consulted her family physician to see if he could in any way aid her in her desire to bear children. He advised dilatation and curettage of the uterus. This was done by him in his office. As a result she developed pyosalpinx on both sides. She suffered another operation, sacrificed both fallopian tubes and the ovaries, and the loss of health for months, besides losing all hope of bearing children. The early procedure was easy enough to advise and the technique simple. Consequences should have been seen as among the possibilities.

Many of you may contend that office operating of that kind is not conducive to asepsis. Undoubtedly such is the case, and I believe, with emphasis, that the hospital or the properly prepared home is the place for such work. There certainly was a weak link in the aseptic chain in this case.

A woman in the twenties, married a year and a half, came to the hospital complaining of rather indefinite pain in the pelvis. An examination under ether was recommended and was made by the senior surgeon and two others, who all agreed that there was no evidence of trouble in the tubes. There being a slight and innocent-looking discharge present, it was decided to curette the uterus, which was done. The subsequent history of this patient was that of the first case cited.

Here was an operation which was performed, under full aseptic precautions, by one skilled in the use of instruments. Here was a case in which the infection, being present in the vagina or uterine canal, was carried to the tubes, or, being present in the tubes, was spurred to renewed activity.

In passing, I may say that an exactly similar case occurred,

within three weeks of the ones cited, in the practice of another surgeon of equal skill and under like conditions. I mention it simply to illustrate that the former case carries its parallel.

What is the remedy in this class of cases? I would suggest, in the first place, that as perfect conditions of asepsis be secured as are possible. The second suggestion is that the vaginal discharge be proven "not guilty" before operating. My third is, that we hold ourselves in check a little and not be too anxious to perform an operation, the value of which is often problematical in any case. A vaginal discharge does not necessarily mean an intrauterine inflammation. The area of vaginal mucosa is much greater than that of the endometrium, and chances are more than in favor of the discharge coming from the former tract. Let us not accustom ourselves to think that such a simple operation can do no harm. Let us only perform the operation when the demand outweighs the risk involved.

The second class of danger in curetting might be called dangers in not curetting thoroughly. A case or two will convey the point I wish to make, better than anything else.

A young woman, married, with symptoms of inevitable abortion, called a surgeon, and he, under strict aseptic precautions, curetted the uterus. It was flushed out with hot sterile water and the bleeding controlled. A few days later hemorrhage again set in, and after other methods had been tried for ten days, she continued to bleed, was curetted again, and a few bits of fetal bone were removed. The uterus was again flushed out as before and the bleeding controlled. The surgeon discharged the patient after two weeks, and she progressed fairly well for two months with occasional slight hemorrhages. Then bleeding again started, and she began to show some symptoms of sepsis. She consulted another surgeon, who also curetted and removed the balance of the fetal structures. The patient's resistance had by this time been so reduced that the sepsis progressed faster than the measures instituted to check it, and the patient died after abdominal drainage was tried.

Another case not as serious in consequences, but which could have been, happened to another surgeon. The uterus was presumably emptied of a four-months fetus, with membranes. The uterus was flushed out and hemorrhage controlled. The next day the patient experienced a few shallow labor pains and expelled the fetal head.

How can we make sure that the uterus is emptied? The method is as simple as it is efficacious. Dr. W. F. Wesselhoeft first suggested to me the introducing of the forefinger into the uterus and sweeping the entire surface of the cavity. Additional aid can be secured by placing the other hand over the fundus and thereby controlling the movements of the forefinger.

Just in passing permit me to remark that, in spite of my early teaching, I have seen bleeding entirely cease when the uterine cavity has not been empty.

The greater and the gravest danger is in using too much force in curetting, resulting in perforation and at times extensive laceration of the uterus. This danger is at a minimum when the uterus is normal, not at the time nor recently having been pregnant. Here the uterine wall furnishes enough resistance to the curette, save in the hands of him who may be particularly vicious. Recently I saw a most skillful surgeon introduce a sound into a uterus nine months after pregnancy. It was introduced carefully, with no force, and yet it passed right through the fundus into the peritoneal cavity. The organ was normal in size and seemingly in texture.

Some months ago a patient came to our hospital with a history of having been through a normal delivery ten days before. Symptoms of sapremia developing on the fifth day of her confinement, her physician curetted her at home. As she grew worse instead of better, she was sent to the hospital. Examination under ether disclosed a perforation of the uterus, and subsequent abdominal section showed the presence of a rent in the posterior wall of the fundus. Hysterectomy was made and recovery ensued.

About a year ago a case entered the hospital at night, sent by a physician who frankly acknowledged, in a manly way, that he had punctured the uterus while curetting for inevitable abortion. Examination disclosed the correctness of his acknowledgment. An abdominal incision was made and a large jagged rent was found in the posterior wall of the uterus. In the posterior cul de sac, in close proximity to the rent, lay the fetus and a portion of the placenta where they had been pushed by the operator. Hysterectomy was made here and the patient recovered.

These two cases serve to demonstrate that the curette is,

under certain conditions, as dangerous an instrument as can be put in anybody's hands. No case could illustrate, as the last one does, the value of the finger as a safe instrument. With one finger carefully working over the inner surface of the uterus, the other hand on the fundus as a control, the danger of perforating is reduced to a minimum. After all adhesions are cleared, the fetal structures can be removed with the placental forceps, if any remain that cannot be taken digitally.

It may be within the province of this paper to discuss the curetting of the septic parturient uterus, but as it rather lies outside my own experience I prefer to leave it to someone more competent. I cannot refrain, however, from condemning the procedure. In this I do not mean that the uterus filled with decomposing blood-clots or fetal detritus should be allowed to remain so. These are the things that justify curettage. The point is to differentiate between true sepsis and sapremia, to curette in the latter condition and to avoid it in the former. The pathologist will be of great assistance here in determining, by cultures, the presence or reverse of septic organisms. In true sepsis, the disease is general, with a local focus in the uterus, to curette which would only serve to spread rather than check the process.

If this superficial discussion serves to help one, in a slight way, through one of the difficulties that beset us all, it will have served its purpose.

Discussion.

Dr. Earl: I wish to speak simply of the matter of curetting a parturient uterus and some of the dangers. By parturient I would also include a case of incomplete and septic abortion. Those are the cases that are perhaps as common as any we have in practice.

The dangers, just as Dr. Chandler has outlined, are the danger of introducing or spreading sepsis, the danger of too great force, and the danger of not doing quite enough.

The danger of spreading sepsis that is present. I do not agree with what he says in regard to our having no way of disinfecting the cavity of the uterus. We have ways of minimizing the danger of spreading or stirring up or pushing into the uterus septic material contained in the cavity of the uterus, and I think it is exactly there that the greatest danger lies. With proper care and with proper instruments the number of cases in which there is danger of perforating the uterus is very small. But the method that should be followed in cleaning out

such a case is to clean the path as you go. The doctor has said that the instrument must almost necessarily touch some surface which is not clean, but you can avoid a great deal of the danger by cleaning up as you go. The external portions certainly may be scrubbed pretty vigorously and thoroughly as far as the skin goes. When it comes to the junction of skin and mucous membranes, gentle measures must be employed. The vaginal surface may be guarded by the speculum so that nothing need touch the vaginal wall on its journey to the uterus. Then the cervix may be cleansed much in the same way. Clean, dry gauze will remove most of the discharge. Then the cervical canal may be cleaned, and every bit of discharge removed, and that disinfected with pure peroxide.

Then the contents of the cavity itself. It seems to me that here is where a common error is made. After this preparation has been made then the instrument is put in and the curetting begun. Instead of that the contents should be as gently and thoroughly removed as possible before any curetting is done, and it is here, I believe, that the intrauterine douche is of the greatest service. A stream of warm, clean water should be carried into the uterus with the utmost gentleness, and every bit of the discharge that will come away by the use of the douche removed, then the surface wiped with clean, dry gauze, and finally, when that is done, the inner surface of the uterus swabbed again with the pure peroxide of hydrogen. In that way much of the material will be rendered less dangerous to the woman. Then the curette may be introduced and the curetting finished.

Once the curetting is done, I think the after-flushing of the uterus is at least unnecessary. I believe it is injurious. I think again the clean swab of gauze, with the pure peroxide, is the better thing to use, and then the uterus should be drained. The question of curetting the uterus at term is a thing to be condemned. If it is curetted, I think the limit of time is not more than four to six days after labor. I think after five or six days the curette is pretty sure to do more harm than good. Thorough washing, wiping, and draining then will do all anything can do. As to the instrument used in curetting after labor at term, I think a special form of curette is necessary for that sort of work. The curette should be of large curetting surface, should be sharp, not dull, and should have a very flexible shank. The curette being large, it covers a good deal of surface at one time; being sharp, it requires very little pressure to do its work. If there is any tissue there, a little touch of the sharp curette will remove it and not do much harm to the uterus.

The drainage, I believe, in such a case is of the very greatest importance. I believe that we make a very great mistake in the care of all labor cases in not providing for drainage. I be-

lieve the drainage after labor is of the very greatest importance, and that is not provided for unless the woman is made to assume some sort of semi-erect posture for the purpose of emptying the bladder during the first few hours after labor. You will be surprised at the amount of blood and clots that will escape in that way.

Dr. Steadman: It seems to me that one of the dangers of the present time, which was not mentioned by Dr. Earl, is the incompetence on the part of a great many men who attempt curettage. The indiscriminate use of the catheter by abortionists, and the reckless use of it by women upon themselves, has brought about a great demand for the operation of curettage, and a great many are attempting the work of curetting without knowledge of the curette, and a great deal of damage is done.

I have in mind at the present time a case where I gave ether for a physician who was to curette the uterus. He was a big man, six feet tall, and when he got that curette inside he put the whole force of his strength twice upon the wall of the uterus. I said to him, "Where do you think you are—on the farm?" Within two weeks of that time I had to operate upon a little woman for an abscess in the intestine caused by a curettage of that same physician. I think what we need to-day is to start a mission of education for the regular physician who is attempting to curette the womb.

Dr. Earl: I want to answer Dr. Warren in regard to the after-washing. What I said was incomplete. I appreciate exactly what the doctor referred to, the necessity of leaving a clean wound, but I think that can be done much better by other means. I think that clean forceps and gauze will remove bits of membrane much better.

The matter of dilating is practically always provided for in the septic uterus. It is large enough to admit one or two fingers easily almost always. There are one or two places where I still cling to the use of 10 per cent. iodoform gauze, and I believe it is a good thing to put into a septic uterus after a curettage for incomplete abortion. If there are any bits left there, if your disinfection has been incomplete, you have in the iodoform gauze an agent which is capable of taking care of the bacteria. The gauze may be removed the next day by the finger. I believe it is better than the stream of water.



PROCIDENTIA.*

BY W. F. WESSELHOEFT, M. D.

Improvements in surgical methods are gained by study and experience. In many departments this has resulted in such satisfactory procedures that improvement of established methods is unnecessary. This happy condition, however, cannot be said to be the case in dealing with procidentia of the uterus.

It is for this reason that I venture to submit a few considerations, and suggest some slight modifications of reasonable surgical methods, which have aided me and gained satisfactory results for my patients.

Simple procidentia following loss of support of the pelvic floor is considered. Complicating conditions, sometimes acting as partial or accessory causes, such as tumors, are omitted.

In woman the upright position not only throws upon her pelvic floor the function of closing the pelvic outlet of the abdominal cavity, but also subjects it to the full pressure of the abdominal contents more or less directly. This pressure is increased, obviously, by certain ways of dressing, and by such acts as lifting of weight and straining in the act of defecation.

The pelvic floor is composed of planes of fascia and muscles, stretched across the true pelvis from its walls. Through this floor the three openings of the rectum, the vagina, and the bladder, pass.

From within outward this floor is made up of, first, the recto-vesical fascia, which expands over the lower surface and sides of the bladder, between the bladder and vagina, and around the vagina and rectum. Below this layer, and in apposition with it, come the levator ani muscles. From either side they meet in the middle line from the coccyx to the rectum, and, forming a sling which embraces the rectum and vagina, are the main supporting factor. Apposed to this below is the second plane of fascia—the ischio-rectal—closely in relation to the recto-vesical fascia as it passes forward beneath the bladder, after surrounding the rectum and vagina. Below this group, anterior to the rectum, is the triangular ligament. This consists of two planes of fascia stretched between the pubo-ischial

* Presented to the Massachusetts Surgical and Gynecological Society.

rami. Between its layers are the fibers of the deep transverse perineal muscles. Below this are the muscles of the perineum, the bulbo-cavernosus, superficial transverse perineal, and constrictors of the vagina. Below this, still, are the deep and superficial layers of the superficial fascia. Through the triangu-

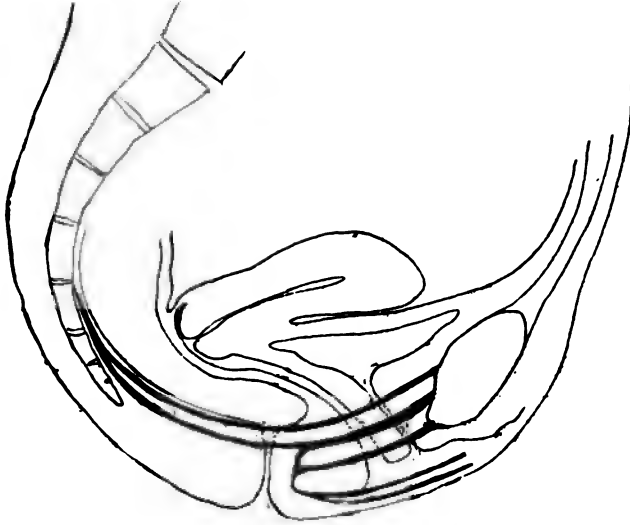


Fig. 1. (After Dickinson.)—Normal relation of pelvic organs, showing fascial planes of pelvic floor.

lar ligament and these muscles and planes of fascia beneath it pass the vaginal and urethral canals. (Fig. 1.)

The cervix uteri is firmly attached to the upper part of the vagina. The various ligaments of the uterus are mere guy-ropes, which exert an influence upon its position but do not give important support against descent.

In childbirth the head occupies almost the entire space of the bony pelvis, and the stretching of the vagina and these structures of the pelvic floor, to allow of its passage, is one of the marvelous phenomena of nature. Unless this passage is gradual, and time adequate is permitted, damage is sure to result. What we see, then, are the more superficial effects of trauma, but the damage done the deeper structures is frequently not revealed until long afterwards, when the results are recognized by such a condition occurring as procidentia.

The rupture of the perineum is now usually repaired imme-

diately, and, when the damage is confined to the superficial structures, the value of such repair is obvious. The overstretching of the deeper structures, however, is not corrected.

A woman after labor usually remains in bed from ten days to two weeks. External evidences of damage are then healed, and involution of the uterus is so far advanced that getting up and about does not disturb this process.

She then gets up, and the stretched and weakened floor is subjected to the weight of intra-abdominal pressure, plus a uterus of more than usual weight.

She may do very well for years, and then, when the tissues, strong and vigorous enough in youth, begin to lose their tone and grow weaker, the effects of this overstretching, and necessity of supporting superimposed pressure, evidences itself by a descent of the uterus from the weakening of the pelvic floor.

The effects of the upright position, I believe, are not generally appreciated. The back is horizontal and not vertical in other mammals, and in them the pelvic contents and abdominal weight fall naturally away from the pelvic floor; while in women this floor has these contents and weight to support. To this is added an increased pressure downward from almost every effort that she makes, particularly in lifting and in doing heavy work. For this reason alone, I believe that the period of lying down, preferably on the side, should be prolonged after childbirth when practicable. This would favor restoration of the normal strength to the floor, before subjecting it to the strain of supporting weight. It is not more unnatural to keep a woman in bed three weeks than the usual ten or eleven days, and it should be time well spent.

When the damage has been confined to the more superficial parts of the floor, and, as time goes on, prolapse of the anterior or posterior wall of the vagina, or both, results, an operation for cystocele and rectocele, with repair of the perineum, is sufficient. When the upper part of the vagina with the uterus descends, however, repair of the outlet is not sufficient, and the results are disappointing.

Hysterectomy for procidentia of the uterus fails absolutely to meet the situation. Prolapsus of the uterus is practically a hernia of the upper vagina and uterus through the pelvic floor, dragging down the walls of the rectum and bladder contiguous to the vagina as well (Fig. 2), and the removal of the

uterus does not cure the hernia. Indeed, one of the earliest cases, in which I did an abdominal operation for prolapsus, was in a woman on whom vaginal hysterectomy for procidentia had previously been performed, and in three months she had returned to the hospital. The condition was the same, except

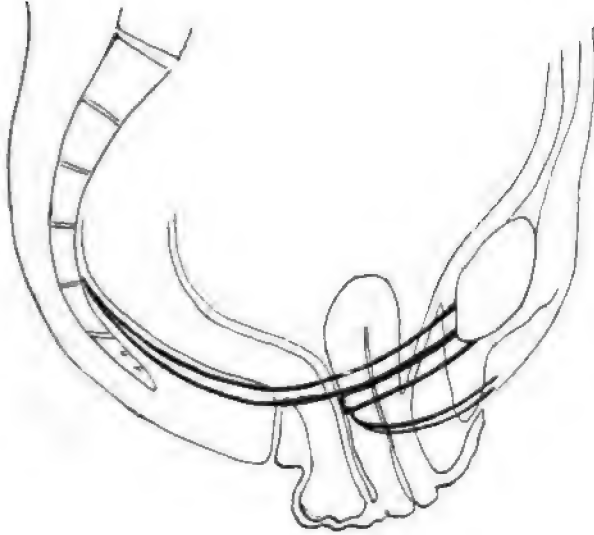


Fig. 2.—Procidentia. Suggesting, when compared with Fig. 1, how the fascial planes of the pelvic floor must be stretched to their rectal, vaginal, and bladder attachments.

that the scar, where the cervix had been, was now the most prominent part of the prolapsus.

To meet the requirements, some form of suspension from above must be adopted; and this is best accomplished by fixing the fundus of the uterus to the anterior abdominal wall. In this way the procidentia is overcome, and the pelvic floor through its strong attachment to the vagina, is held up and firmly supported. A thorough repair at the outlet will then give sufficient support to the tendency to cystocele and rectocele (Fig. 3).

This fixation should never be performed in a woman who may become pregnant. When the operation is imperative, and the woman has not passed her climacteric, it is necessary to ligate the tubes and so render her sterile.

Various methods for so fixing the uterus have been prac-

ticed. The firmer is the fixation and the less the chance of tearing away or stretching that results, the better is the operation.

The method which seems to me the best, and which gives the least chance for the uterus to drag away, is a combination of the usual fixation of the fundus to the rectus muscles, and the Gilliam-Ferguson method of drawing the round ligaments

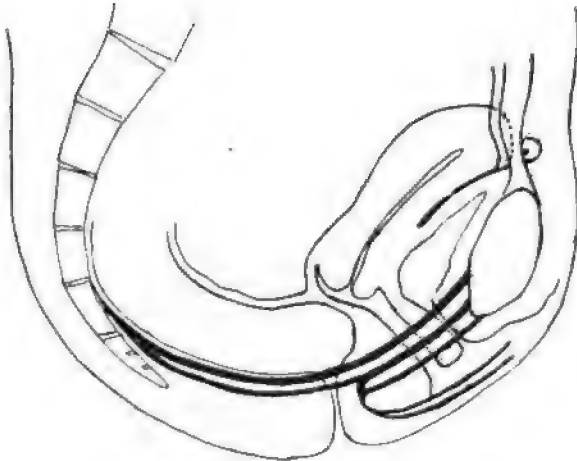


Fig. 3.—Restoration by operation. Showing the extra-peritoneal muscular attachment of the fundus, and attachment of the round ligament to the aponeurosis.

through openings in the abdominal wall and fixing them to the aponeurosis covering the rectus muscle.

Both abdominal and vaginal operations can be done at one sitting. It is best to do the vaginal work first, as the parts are relaxed and can be readily dealt with; while if done after the uterus and vagina have been drawn up, they are less accessible. It is not usually necessary to amputate the cervix, but this, or a repair, should be done if indicated. Abrasions or ulcerated areas are frequently present on a cervix that has remained outside, and been subjected to the rubbing of the clothing. These can be ignored usually, as they heal rapidly when the cervix is protected within the vagina, and, so far as I have observed, their presence has not endangered the healing of the repairs.

An anterior colporrhaphy is made to restore the bladder floor. After denuding the required area silkworm-gut sutures are

passed lengthways, gathering up the tissues in the same way as in Dr. Bell's method of repairing the perineum. This gives a wide, strong union of the fascia supporting the bladder.

The rectocele is then dealt with by a wide repair of the perineum, with buried removable silkworm-gut sutures by Dr. J. B. Bell's method, described by him before the State Society.

The abdomen is then opened from above, a very short incision only being required. The uterus is grasped by forceps, and drawn up into the wound. The bladder wall is stitched with catgut to the anterior surface of the uterus, as suggested by Dr. Emerson. A small stab wound is now made on one side in the aponeurosis covering the rectus. Through this and through the rectus muscle, but avoiding the peritoneum, the blades of a pair of artery forceps are pushed. The round ligament on that side is caught by the forceps, as near the uterus as practical,

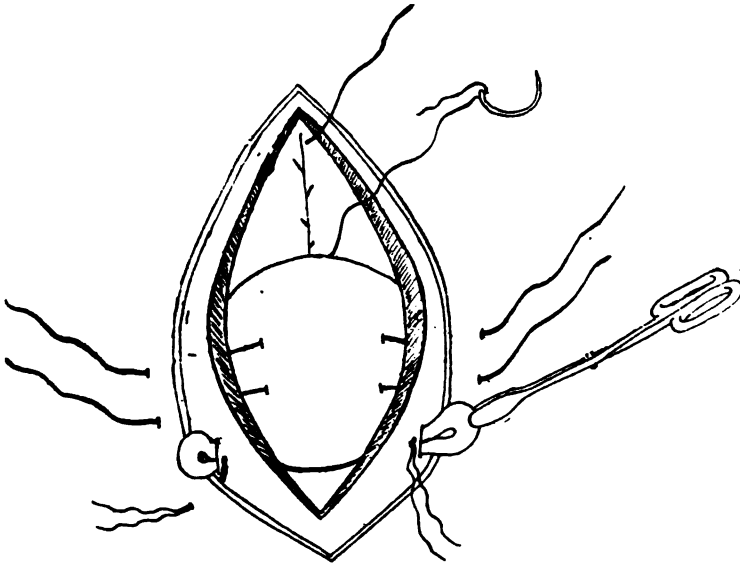


Fig. 4.—Method of fastening the uterus to the rectus muscles, and the round ligaments to the aponeurosis, extra-peritoneally. The peritoneum is closed, and fastened to the back of the fundus.

and a loop of round ligament pulled through (Fig. 4). This is fastened to the aponeurosis by a suture of Pagenstecher thread, tying a slip-knot. The ends of the thread are threaded on a

needle and passed through subcutaneous fat and skin, to be left outside.

The same is done with the round ligament of the other side.

Two silkworm-gut sutures are passed from side to side through skin, aponeurosis, muscle, and the fundus of the uterus, avoiding the peritoneum (Fig. 4).

The abdominal wound is now closed by the Davison method, using Pagenstecher thread. The supporting silkworm-gut sutures are tied over a gauze pad, and the operation is completed.

The uterus is thus firmly fixed to the rectus muscle by its fundus, and also by the round ligaments to the stronger aponeurosis. The peritoneum lies outside this broad firm fixation.

The wound stitches, both abdominal and vaginal, are removed on the tenth or eleventh day. The stay-sutures through the fundus and round ligaments are left in about eighteen days. The sutures fastening the round ligaments are easily removed, as they have been tied by slip-knots.

It is far preferable, to my mind, to use non-absorbable sutures, and remove them, than either to leave buried non-absorbable sutures, or to depend upon those that are absorbed.

It is desirable, to insure sound wound consolidation, that a woman remain in bed fully three weeks.

While other methods may still be devised to improve the operation for procidentia, the above procedures insure a firmer fixation and support than any other that I know.

Discussion.

Dr. Briggs: Some fifteen years ago I did perhaps my first operation upon cases of this kind, and for five years or so I operated entirely by plastic work upon the vagina, making first an amputation of the cervix, following by an anterior colporrhaphy and a posterior colporrhaphy and the closing of the perineum. I believe that operation is just as good to-day as it was then, and has a field of usefulness adapted to those cases not too far advanced.

Following this experience, which was satisfactory to a certain extent, we had cases where there was a recurrence, where in the course of a few months' time the procidentia was present again, and these cases were treated by vaginal hysterectomy. Now vaginal hysterectomy was made, removing the entire uterus and then doing plastic work upon the perineum and the anterior and posterior vaginal walls. It was found that recurrence followed in these cases and that when it did recur it

was almost impossible to fasten the vault of the vagina in place by any known method. There would result a hernia of the vagina. Then came an improvement upon this operation, which consisted in anchoring the vault of the vagina to the stumps of the broad ligament at the time the vault of the vagina was closed. This was a great improvement, but I do not believe at all now in vaginal hysterectomy as a means of relief for procidentia, because we need the uterus to fasten to the abdominal wall as a means of holding up the prolapsed vagina.

The next step toward progress was a ventral suspension, and this was done by freeing the anterior surface of the uterus and bringing the uterus in contact with the parietal wall. This was a very indefinite procedure, for there was no knowing how long this adhesion would remain and whether it would be really of any service in permanently holding the uterus in position.

That was quickly followed by an operation known as ventral fixation. Then came the Gilliam-Ferguson operation, which was first used, I think, in cases of retroflexion of the uterus, but it makes a very strong method of holding the uterus in position in cases of procidentia, and I have used it as Dr. Wesselhoeft has advised me in a number of cases during the past year in addition to the ventral fixation, at the same time making all the plastic operations upon the vagina. I had not used the Gilliam-Ferguson operation previous to the past year and therefore I cannot say how much additional benefit is to be derived from it, but mechanically it certainly brings a much larger surface and very much more securely anchors the uterus to the parietal wall than would fixation alone. I believe it is a very decided advantage because it does more securely hold the uterus.



THE USE AND ABUSE OF OFFICE GYNECOLOGY.*

BY J. P. RAND, M. D.

This is a subject with which all of the older members of this society are familiar, but the achievements of modern surgery have been so brilliant, that there seems to be but little desire upon the part of our younger associates to give the subject any recognition. There are many young physicians who have had no practical instruction in office treatments or the use of pessaries—in fact, would hardly recognize one if they should see it.

I confess that the fitting of a pessary does seem rather tame beside a hysterectomy or ventral suspension, but the chances are, that the ordinary practitioner will have occasion, much oftener, to do it and its introduction, in most hands, would be an altogether safer procedure. A pessary is good for what it is good for, and, like everything else, is good in its place. There are many cases where it can be of undoubted service. I remember my first experience fitting one.

Patient, Mrs. G., age twenty-six. Had been married for several years. Complained of constant backache and a good deal of vesical irritation. Was very nervous and felt hardly able to do her own work. Examination showed a small retroflexed uterus which was retroverted into the hollow of the sacrum.

It took me some time to adjust a pessary, and I had some laughable experiences in the attempt. The patient, however, did not discover all my blunders (she didn't know any more about pessaries than I did), which made her very tolerant, and even inclined to blame herself for having such an uncommonly irregular pelvis. Well, as I said, after some weeks of experimenting I got a Thomas' retroversion pessary adjusted, which kept the uterus in practically a normal position and overcame the flexion. This she wore for more than a year, but as she was anxious to become a mother I removed the pessary and gave her my professional consent. Her pregnancy was uneventful and in due time the baby appeared. Her health continued to improve, and she has never had any serious trouble with her womb since, although for a time, after her first preg-

* Read at Annual Meeting of Massachusetts Surgical and Gynecological Society.

nancy, she returned to the support. Later she bore a second child, and she has been a perfectly healthy and robust woman for nearly twenty years.

Case 2.—Mrs. H., age twenty-five, a delicate little creature of consumptive habit. A few months after her first and only confinement her vision became so poor that she could not read fine print or thread a needle. She did not complain of pressure on the vertex, backache, or any of the conventional symptoms of uterine disturbance. Examination showed a retroverted uterus slightly prolapsed. I introduced an ordinary Smith pessary, which relieved her vision at once and which she wore with absolute comfort until she died of tuberculosis two years later. Here, truly, was an instance in which a mechanical form of office treatment was indicated.

Case 3.—Mrs. G., age sixty-four. She is one of a large number of patients who bore children before the days when it was considered necessary to repair a lacerated perineum at once. The uterus in such cases falls down and drags the rectum and bladder along with it. As a class they are afraid of operations, and nothing but imminent death would ever make them consent. I have had many such women to treat. This patient had been a semi-invalid since the birth of her last child, some forty-odd years ago. She could not go to church or do anything where she felt under restraint. Examination showed a lacerated perineum with an eroded os protruding from the vulva. The os bled easily upon touch, and there was at all times a watery offensive discharge from the vagina.

I considered the condition very serious and likely to become malignant, if indeed it had not already. Accordingly I consulted a surgeon in regard to removing the organ entirely, and advised the woman very strongly to have it done. She absolutely refused to consider the proposition. Said she had two sisters who went to hospital for surgical treatment and both came home in a box, and that, so far as she was concerned, she preferred to live as long as she could and then be permitted to die a natural death among her relatives and friends.

Seeing that argument and persuasion were alike useless, I introduced a large circular hard-rubber pessary which filled the entire pelvis. This held the uterus up and supported the cystocele as well. With the introduction of the pessary the dragging backache was relieved, the bleeding ceased, and the vag-

ina gradually shrunk to its normal dimensions. At the end of three months I actually tore the mucous membrane of the outlet of the vagina in removing the pessary. I then changed it for a size smaller, which the woman is still wearing with absolute comfort. She is in better health to-day than she has been for years, and says she would not go without her "support" for a thousand dollars. I might say right here that this patient had tried to wear an ordinary Smith pessary a few years before, which failed to do her any good. The pessary itself would not stay in the vagina.

I know our surgical friends will say that this was all wrong. The woman should have been taken to a hospital and had a complete hysterectomy and thus avoided all possibility of developing a cancer. Granted. But this is a free country, and it is the inherent right of every woman to be a blank fool if she desires, even to the point of dying a natural death. Some of you will recall that the late William Tod Helmuth had strabismus. One day in his clinic a patient came in who was afflicted in the same way. Dr. Helmuth said to him: "Why don't you have that eye straightened?" The patient gave Helmuth a knowing look and replied: "I don't want to; would you?" "No," said the professor, "I have known some very bright people who were cross-eyed." Well, I have known some very bright women who refused to be relieved of their infirmities, when competent surgeons, with sterilized gloves and itching palms, stood ready to aid. Their sentiments may have been all wrong, but they were real, and no amount of argument would change them. In a medico-legal sense they are as truly inoperable as though they were in the last stages of Bright's disease, and as such become legitimate cases for palliative treatment.

Though a little outside the scope of this paper, I wish to say just a word in regard to the introduction of a pessary. Anterior displacements of the uterus are difficult to correct by pessaries and, as a rule, little benefited by them. A simple retroversion is usually easy to overcome by putting the patient in Sims', or the knee and chest, position and using the finger for a repositor, i. e., if you are a born gynecologist as indicated by a long index finger. I usually introduce the pessary through the vaginal orifice with the patient lying on the back, the convexity of the instrument always being towards the left side of the patient. A uniform method of doing this will often save

one from the blunder of forgetting the exact position of the pessary after it is introduced.

I then hold on to the anterior end of the pessary with the left thumb and index finger, meanwhile passing the right index finger through the pessary, until the cervix is reached, when by a slight pressure of the finger the posterior end of the pessary will slip behind the cervix and glide easily into place.

I then put the patient in the knee and chest position and, using the pessary for a repositor, push gently forward and up while the patient changes the position of the abdominal viscera by coughing. If this does not antevert the uterus I place the finger in front of the cervix and press it back as the patient coughs. The above procedure will restore the position in most cases, but, if the uterus is sharply bent upon itself, you cannot overcome the flexion by any amount of pressure in the vagina. For such cases the intra-uterine repositor is necessary. I do not like to attempt to replace a retroflexed uterus with a sound. The womb often twists with the sound, when it is rotated, and as soon as the sound is removed goes back to its former position. A lever repositor like what I hold in my hand works more satisfactorily. If the os is patulous it can be introduced without a speculum. In most cases, however, I prefer to use one and see what I am about. I have the patient lie upon the back, or in Sims' position, when the repositor is introduced. I then steady the instrument while she gets upon her hands and knees. With the abdominal viscera out of the way, and the aid of gravity, I can bring the uterus forward and be absolutely sure that it is in an anteverted position. I then remove the repositor and leave the uterus in place. A tampon or pessary is then introduced to keep it there.

A well-fitting pessary gives no sensation of a foreign body to the patient. If she feels it as such, don't allow her to wear it away from the office. Put her through a series of exaggerated muscular efforts to see if it remains in place, and if it stands the test send her away with directions to report inside of a week. The after attention is comparatively simple; I usually remove the pessary and allow the patient to go without it for a few days every six weeks.

Another condition that can be well treated at the office is simple uterine congestion unaccompanied by deep-seated endometritis or lacerations of the cervix. The use of medicated tam-

pons together with the hot vaginal douche will give satisfactory results.

Pruritus of the vulva and anus is often due to a general neurosis or some internal rectal trouble. Associated with this is usually a hyperesthesia of the vagina, bordering upon actual vaginismus. It is here that orificial surgery will be worth a trial. Let me illustrate by a single case.

Patient Miss T., aged twenty-eight, single. Was obliged to give up teaching on account of excessive nervousness. There was no displacement of the womb, though her previous attendant had tried a pessary, which gave her no relief. Local examination revealed an exquisite sensitiveness of the vagina, so that the introduction of the finger caused actual distress; accompanying this was the local pruritus which kept the patient in a hysterical condition unfit for any work. I began treatment by dilatation of the vagina with an exceedingly small bivalve speculum and painting the entire vault with the tincture of iodine. It required fifteen minutes or so to give a treatment, as I planned to tire the sphincter muscle out before I stopped. Improvement began with the first treatment and after two months, or so, she was practically well.

Six years later the pruritus returned in a mild form which a half-dozen treatments relieved.

Right here I will give you my experience with the proprietary ointment known as "Resinol." It has served me well in cases of pruritus vulvæ in which you do not wish to make an examination or apply local treatment.

I was speaking a moment ago of uterine congestion unaccompanied by lacerations as legitimate cases for office treatment. When lacerations are present the line between use and abuse depends upon the volition of the patient. Let us set it down as an axiom that a bad laceration is never curable except by a surgical operation and that the physician who attempts to cure such cases by other means is false to his patient, i. e., unless he knows that the patient is physically unable to have an operation. I say physically unable, for in these days of "free beds" and gratuitous surgical treatment every patient, no matter how poor, can go to some hospital and have her lacerations repaired without money and without price.

Our public hospitals are doing a magnificent work in this respect. True, the individual practitioner, who is not con-

nected with the "trust," suffers from lack of patronage, but the work goes on. The skill of the rising medical generation is increased and the general public is benefited thereby. The modern hospital is a veritable medical Messiah, and the general practitioner even now is "like the voice of one crying in the wilderness," whose head will ere long be sacrificed to the caprice of an unappreciative public.

But I have wandered from my theme. I was speaking of the use and abuse of office gynecological treatments. The abuse is largely due to the ignorance or duplicity of the physician who gives them. The patient is absolutely at his mercy so far as knowledge of her physical condition is concerned. She can't look into the speculum herself, and even if she could would she be able to know anything by it? Having been examined by one physician she is loath to expose herself to another, and thus she goes along, accepting his word for every change in her internal condition, and trusting to his integrity and skill to give the best treatment.

It is pitiful to see such confidence abused by wolves in sheep's clothing, to see a patient fleeced of all her money and, what is still worse, her chances for recovery. And yet the physician is not always to blame. There is no abuse of confidence in treating a uterine cancer with tampons, at any stage, if the patient knows of her condition and refuses surgical relief. There is no occasion for censure if the physician has given honest advice. He may be mistaken. The best of physicians make mistakes. (I have done so myself.) Let me give a case in point.

Patient Mrs. P. Married for five years; never pregnant. Age about thirty-three. Complained of pain in left side of abdomen extending to the back. There were painful periods, vesical irritability, and dragging pains in the pelvis. Examination showed a displaced uterus by what seemed to be a fibroid growth attached to it and crowding the uterus to one side of the pelvis. There was no hemorrhage or signs of any softening.

I advised the patient to let it alone. This she did for six months or so, when she was visiting in New York and was feeling so miserable that her friends persuaded her to consult Dr. Pryor. He found fluctuation in the tumor and advised an immediate operation, believing it to be a suppurating fibroid.

The growth proved to be a dermoid cyst and the patient nearly died upon the table in his attempt to remove it by the vaginal route, his favorite method. He could not control the hemorrhage and after working at it for nearly three hours was obliged to give it up and perform an abdominal section to ligate the bleeding vessels. I am glad to report that the patient survived in spite of my bad advice and Dr. Prior's "favorite method."

There is a moral right here against diagnostic blunders and "favorite methods" of treatment which you can work out for yourselves.

But my time is up, and I can only summarize in a brief way the points I should like to emphasize.

(1) The use of pessaries is still legitimate in a selected class of patients, but only hard-rubber ones should be employed. A soft-rubber pessary, for continuous use, is an abomination to pelvic hygiene and a menace to the patient.

(2) Electricity in various forms is of decided utility in cases of uterine congestion, erosions of the cervix, membranous dysmenorrhea, and other conditions not dependent upon lacerations.

(3) Orificial treatment which can be done without general anesthesia may be practiced at the office for the relief of pruritis and irritability of the vagina.

(4) Caruncles of the urethra may be cauterized or removed and suppositories, local treatments, and tampons applied.

The abuse of office gynecology comes, as I have already said:

(1) Of failing to recognize dangerous lesions in their incipency or failing to inform the patient when they are recognized.

(2) Of failing to observe antiseptic precautions in entering the uterus or bladder.

(3) Of failing to advise the removal of pathological growths before the general health is seriously impaired or the surrounding tissues involved, when surgical relief is impossible.

(4) Of magnifying the importance of slight deviations from the normal condition of the pelvis and rendering the patient a semi-invalid as a result.

(5) Of prolonged local treatments unnecessarily for selfish ends.

These are a few of the uses and abuses of office gynecology

suggested by my subject, and I thank your chairman for the opportunity of presenting them for your consideration at this time.

Discussion.

Dr. Packard: Surgeons suffer quite a castigating at the hands of Dr. Rand, but it is not necessary to say to you that we operators never see these cases until they have been through all possible forms of office gynecology. It is only when the physician can find nothing that will support the uterus that the patient comes to us. When a patient comes with procidentia we do not do a hysterectomy. Our palms are not itching quite to the degree Dr. Rand suggests, and these cases are almost always of the charity order.

Really, the only efficient surgical means to radically cure procidentia in which the pessary fails to support is either a combined vaginal and suprapubic operation in the shape of some sort of shortening and amputating the cervix, or, what I think is better still, merely amputating a long cervix and then performing a plastic operation. After that the patient never has any more trouble with procidentia.

Dr. Sherman: I want to correct Dr. Rand in one thing. He said patients could not examine themselves. I had a patient a little while ago who came to me complaining of an ulcerated os. I said: "How do you know you have an ulcerated os? Have you been to a physician?" She said: "No. But I made an examination. I have heard about you doctors humbugging women, so I bought a speculum, then I got my couch in front of a good light window, took a mirror in front of me, introduced the speculum, and if I knew what to apply I could treat it."

Dr. Martin: I will mention a point as suggestive of a legitimate field for office gynecology. A great many cases come to the surgeon for operation entirely unfit therefor, and I believe there is good legitimate ground for careful preparatory treatment in the office. Many cases in no condition for good healing are vastly improved by a few preparatory treatments intelligently applied in the office, and I think any surgeon of large experience would welcome such preparation, perhaps under his advice.

Just one suggestion in reference to a remark made by Dr. Packard to which I must take exception. I think there are few uteri that would descend into the world if the prolapsus were brought about entirely by their own weight, if there were not twenty-five or thirty feet of intestine pushing those uteri down. I think it is the superimposed weight upon them that brings about their prolapsus.

VALUE OF THE EXAMINATION OF BLOOD IN SURGICAL CONDITIONS OF ABDOMEN AND PELVIS.*

BY WILLIAM H. WATTERS, M. D.

A subject such as the present one seems to be naturally divisible into two separate parts. One includes all those conditions where blood examination alone will give a positive diagnosis, the other those where the diagnosis is reached by consideration of the clinical history ~~examined~~ with a correct interpretation of the blood findings. Hematology to-day is a science based on the accurate use of instruments of the greatest precision and exact, faultless technique. A detailed description of such instruments and technique has no place here at the present time. Suffice it to say that the ~~hemacytometer~~, the Dare or the Talqvist hemoglobinometer, and the Jenner blood stain are my most reliable friends when pursuing the examination of blood. (Demonstration of instruments and making of films.)

Here I may bring to your attention the most important constituents included in a complete blood examination. In normal blood we find the hemoglobin to be 100 per cent. in the male; 85 to 90 per cent. in the female. The disks vary from 4,500,000 to 5,000,000 per cubic mm. in the female and from 5,000,000 to 5,500,000 per cubic mm. in the male. The number of leucocytes or white cells is subject to a relatively greater amount of variation, anything between 5,000 and 10,000 per cubic mm. being considered normal. Of these leucocytes about 20 per cent. are small lymphocytes, 6 per cent. large lymphocytes, 73 per cent. neutrophiles, and 1 per cent. eosinophiles.

Let us now consider the smaller division of the subject where the blood examination will give a positive diagnosis, irrespective of what may be the clinical symptoms. In this division are found leukemia, pernicious anemia, malaria, possibly chlorosis, and a few other diseases. The most notable illustration of the value of blood investigation that occurs to me at present in connection with leukemia is that of a woman aged forty. She had been examined in one of our large city hospitals, her case had been diagnosticated as a large ovarian tumor, her bed in

* Presented to the Massachusetts Surgical and Gynecological Society.

that hospital was engaged, and I think the hour of the operation decided. In some way, just at this time she came to the notice of Dr. S., who suspected something unusual, and referred her to me for examination. The result was typical and unmistakable:

Hemoglobin, 40 per cent.; disks 2,100,000 per cubic mm.; leucocytes, 584,000 per cubic mm. Of these leucocytes 42 per cent. belonged to that unusual variety called myelocytes. Numerous nucleated disks were also present. This gives, as can be seen, all the characteristics of a myelogenous leukemia. Needless to say, the operation was indefinitely postponed.

A second, less fortunate case, came recently to me for examination, a few days after abdominal exploration for a suspected cancer. The blood examination gave the following results:

Hemoglobin, 90 per cent.; disks, 5,200,000; leucocytes, 211,000; myelocytes, 30 per cent. Nucleated disks, numerous. Also a perfectly typical case of leukemia. In this instance a blood examination would have prevented any surgical interference with its attendant dangers. I think it needless to tell you how often, in fact how almost always, a pernicious anemia is mistaken for cancer, and sometimes treated accordingly. Such a waste of treatment causes much waste of valuable time, and decreases the natural resistance of the patient. I recall a man who had practically every symptom of pernicious anemia except the blood picture, which was indicative of malignancy, and with no demonstrable tumor. Post-mortem examination revealed the presence of a large carcinomatous node in the posterior part of the liver. Malaria, particularly that irregular variety, the estivo-autumnal type, is sometimes confounded with a certain suppurative condition, in which case discovery of the protozoan cause will give conclusive results.

In surgery, however, I find the most valuable part of hematology is the estimation of the number and varieties of leucocytes and the correct interpretation of their meaning when combined with other symptoms. Leucocytes possess as one of their chief functions the power of eliminating injurious substances, bacterial or otherwise, from the body. Such substances are able to exert some attractive influences, called chemotaxis, over the leucocytes, particularly over the neutrophiles.

When, therefore, such injurious substance is present in any part of the body, its presence is manifested by an increased

number of leucocytes in the peripheral circulation and in proportion to the intensity of the injury so the leucocyte count is high or low. In mild cases this count will be perhaps 12,000 to 18,000 per cubic mm., while more severe cases force the number to 50,000 or even more per cubic mm. It will be seen that this leucocytosis is not due to any disease or infection itself, but is the manifestation of an attempt by the patient to overcome that invasion. In other words, the degree of leucocytosis indicates the amount of bodily resistance. In some cases the infection is unable to even try to resist. Here no leucocytosis will be found.

We may obtain one of three results from our count :

(1) A mild leucocytosis, indicating a mild infection and good resistance.

(2) A large leucocytosis, indicating a severe infection with strong resistance and

(3) A slight or no leucocytosis, indicative of very severe infection and little or no resistance.

If properly followed and carefully interpreted no confusion will usually be made in our diagnoses, while great assistance will be received.

Before going further I will note that typhoid fever, malaria, and tuberculosis are three common affections notable for not producing leucocytosis. As a first example of value of leucocyte count let us take a case such as has come to the personal attention of every physician. A patient undergoes an operation for some abdominal condition ; perhaps he has been unwell for some days or weeks previous to it, perhaps not. Within three or four days the temperature begins to rise slowly and steadily ; headache, nausea, and perhaps diarrhea may be present. The question comes—Is it peritonitis or is it typhoid ? A blood examination will be nearly certain to make a correct differential diagnosis ; if peritonitis, leucocytosis ; if typhoid, none. Many and many times has this been done at one hospital, and not infrequently have secondary operations been performed upon the strength of the blood count alone, even without positive symptoms. I recall a case, one of many that might be given, of a Mrs. —, operated on for gangrenous appendicitis. Three days after, the leucocytes were 25,000. On the fourth day 32,000 ; fifth, 36,000, and sixth, 41,000. There was but slight elevation of temperature and no serious symptoms. As trouble

could be demonstrated outside the abdominal cavity diagnosis of probable pus pocket was made even though drainage had been provided for. Operation revealed fully a pint of pus in a cavity walled off by peritoneal adhesions. Several subsequent operations were performed, all according to the indications of the leucocytes, with final recovery as a result. I believe that that woman's life was saved by the blood count. And that is but one of many that could be cited.

It is probably needless for me to remind you that the leucocytes will practically always differentiate uncomplicated typhoid from appendicitis, even without the Widal reaction. The symptoms are not infrequently so interchangeable as to forbid positive clinical distinction. Leucocytosis shows the latter, its absence the former. Certainly nothing should be more embarrassing for a surgeon than to operate for appendicitis and find the typical lesions of typhoid and a normal appendix. This seems inexcusable when differentiation is so easy and so nearly certain.

You may see as I proceed that stress is laid on differential diagnosis in connection with these counts. Without any history or symptoms, leucocytosis may be of but little significance, all one being able to say is that there is an inflammatory or a toxic lesion somewhere. Whether in the head, the feet, or anywhere between, we are unable to say. With the symptoms and history, however, we can decide between malaria with splenic enlargement and splenic abscess, peritonitis and common septic peritonitis, ovarian inflammation from cysts, etc.

Not only in diagnosis but also in prognosis are counts of value, for by them we can often discover how the disease is progressing. The first case that I ever had where this was of much value is still impressed on my mind. It was that of a man with general peritonitis, a patient of one of our leading surgeons. The question was whether operation was advisable or not. The blood was resorted to for a decisive answer. The first count was 42,000; on the next day it was 37,000; the next 33,000; then rose slightly and vacillated for three or four days, finally falling to normal in about two weeks. When hesitating about operating in appendicitis these counts will often prove of value.

After having followed many cases for consecutive days and even weeks, making my examination at the same hour every

day, I have found that I can often (I hesitate to say usually) foretell improvement or the reverse, some hours before it is indicated by the temperature or even by the clinical symptoms; thus, taking the count at noon, I have frequently foretold a probable rise or fall of temperature before the next day and usually with correctness. This is only done where examinations have been made for two or three days previous in order to learn something of the course of the disease.

Puerperal septicemia is also characterized by leucocytosis and as such can be differentiated from certain other pelvic lesions. To illustrate this and at the same time emphasize another point, I will give a short note of a case from which a pure culture of streptococcus pyogenes was obtained from the fundus uteri. The count four days post-partum was 25,000, from which it gradually increased to nearly 42,000, where it stayed for a day or two and then suddenly fell to 10,000, 8000, and 5000 on three successive days. As soon as this fall was noted the most unfavorable prognosis was given, no hope of recovery being entertained; the patient died in about four days. That which I wish to bring to your attention is the interpretation of the sudden fall in the number of leucocytes, indicating, as it did, the inability of the patient to further resist the strong invader. During all this time the woman was not apparently very sick, nor was the temperature alarming, and when the fall in leucocytes occurred other symptoms did not become any more serious than before. Similar cases of fatal results in peritonitis might be given, where the sudden appearance of a very low, even normal, count gave first indication of approaching dissolution. You can now understand how easy it is to incorrectly give a diagnosis from inadequate knowledge of the symptoms and recent history of the patient.

In the above case of septicemia, only one count and that just after the fall, with the patient relatively comfortable, would have probably resulted in a diagnosis of mild septicemia. It illustrates the need of careful watching and correct interpretation and will also show why blood work, improperly done and interpreted, seems to give such false results, and is therefore discredited by the physician at large. I believe that if such observations could be made repeatedly on all surgical cases, particularly all those where there exists a possibility of sepsis, much assistance would be given both to the surgeon and to the patient. Need of secondary operations could thus be earlier discovered, and much suffering be saved and some lives spared.

MAMMARY TUMORS UNDER MEDICAL TREATMENT.*

BY JULIA C. LOOS, M. D., H. M.

Scope and Principles.

The scope of this discussion does not include local treatment with antiseptics or medicaments of any sort, applied either externally or by injection. The Alexander treatment is far from its consideration. It purposes to deal with the progress of mammary tumors when the *patient* is under rational medical treatment, i. e., the local result of putting the system in order, leaving tissue changes to the care of orderly vital action.

No apology is offered for treating the matter as purely from the ground of the basic principles of homeopathy. The stand is taken, with Hahnemann, that these principles must guide in the treatment of the sick or injustice is done the patient and the physician has missed the aim of his mission.

Disease is disorder in the controlling force of the economy expressed by disordered functions. Symptoms are external expressions of internal disorder, subjective or objective. All activities of life operate from within out, hence no outward manifestation is the beginning. The externals of the body express the first developing symptoms and as disease progresses (especially if the external manifestations are eradicated, without internal restoration to order) symptoms are expressed more internally. Expressions of disease progress from without, in. In the course of cure, progress of symptoms is from within, out. The most internal of man is the most vital and thus protection is afforded the life.

When tumors develop in the breast, it means simply there is disorder within. The tumor is not the first, it is not the sickness. It has developed because the controlling force has not regulated tissue formation here and abnormal growth is the result. Accidental bruises from blows, or continued pressure on the glands are but inciting, contributory influences which develop disordered activity. If the patient were in order these bruises would be healed from within.

The tumors develop so because the patient is sick, they can-

*Read before the Pennsylvania State Homeopathic Society, September, 1905.

not make the patient sick. In this connection the Subkatabolism * explanation of Dr. Homer, Wakefield, N. Y., is interesting. Herein we see, that, with other principles of homeopathy occasionally advanced, the "regular" school is advising to get back of the disease to consider the patient.

We may dispose of the tumor to be sure, but the disorder continues, if treatment neglect that, and it will be expressed elsewhere. The natural selection was a site, safest for the economy. If that expression be checked, even more if the entire mamma and surrounding glands be removed, while the disorder within be not corrected, it is an injustice to the economy. The burden of bearing the disease expression is thrown on some other part, more internal, when the originally affected tissues are removed or stimulated to resistance. Herein lies the tremendous objection to surgical measures, X-ray treatment, and local medication in these troubles. Although, for a period, the patient may seem relieved, while a readjustment of the economy takes place for a new localizing, the day of reckoning is merely postponed.

Consideration of "the patient as a whole," paramount to the disorder expressed, and "individualization of patients" are two considerations *necessary* to the application of the law "*similia similibus curantur*." In the midst of other demands and notions, when surgeons and specialists proclaim abnormal tissue growth a menace to the victim, when operations and special treatments are so common that every community has its heroines of this sort, when every woman with a tumor in the breast has friends who echo the shouts of such enthusiasts, to oppose them all and persistently follow a steady course in a different line may take some backbone and courage, but it brings its reward in the ultimate progress of the patient.

Selection and Action of Remedies.

In each case, the remedy selected is that of which the image is presented in the totality of characteristic symptoms of the patient, as in any other affection or disease. Sometimes there is extra difficulty in making this selection because the women may say they are perfectly well, in other respects. Their minds are so impressed with the lump in the breast, that every-

* "Pathology of Katabolism in Relation to the Etiology and Pathology of Cancer" published in *American Medicine*, November, 1902. Reviewed by P. W. Shedd in *Medical Advance*, March, 1905.

thing else is dwarfed. Careful investigation, however, will usually bring forth enough of characteristics to lead to the remedy which the patient needs.

The first result of the use of the remedy, homeopathic to the case, is the general good feeling of the patient herself. She may be unable to define any particular, or she may enumerate several points of distinct improvement. This general relief and buoyancy is a certain sign of a wise prescription. D. C. McLaren, of Ottawa, has stated that he has frequently noticed "in the treatment of tumors, that when the remedy begins to exercise its curative influence, one of the first signs of it is the breaking out of a severe cold with profuse coryza and much expectoration. During such an attack the size of the tumor will diminish very rapidly. After the administration of the remedy for the internal treatment of a tumor, a bad cold is a very favorable sign and the cold so developed should not be treated." This is an example of the development of symptoms from within, out, in the course of cure.

Coincident with internal good feeling and development of superficial symptoms there is relief of pains and discomforts in the breast, if there have been any such. The burning, stinging, sticking, drawing soreness, etc., and unusual consciousness of the part, gradually disappear.

Changes in the Tumors.

(1) If the tumor be a superficial one, not involving the mammary gland, it may withdraw more unto itself, separate from the surrounding tissue and suppurate out as a foreign body. The wise physician will be careful to keep hands off and not meddle further than to cleanse away the pus that discharges, keeping free passage for it after an opening has formed, *without external assistance.*

(2) If the tumor, large or small, involves the gland, even if quite firm and hard when treatment is begun, when internal order is restored, there will be gradual softening to normal consistence or gradual reduction in size of hard nodules and subsequent loss of firmness.

(3) If there is present that dreadful feature, retraction of nipple or skin over the tumor, the drawn appearance quietly disappears, and after a while there simply is no retraction, while softening progresses.

(4) When the tumor has already ulcerated and presents an open surface, pouring forth the offensive, ichorous discharge which demands constant dressing and cleansing, there is also a marked cachexia in the patient. These cases may keep the physician busy selecting remedies, the influence of each lasting but a short time, with symptoms changing to picture the image of another. Even in such advanced cases, under remedies well selected, always on the basis of the patient's characteristics, the discharge becomes less offensive, less acrid, though copious, the involvement of surrounding tissue will be limited, while local pains are relieved or wholly annulled. The *patient*, even with an open ulcerated breast, will experience that general relief which becomes a euthanasia when cure is impossible. The end, then, is through a period of increasing weakness, perhaps more discouraging than pain but less distressing to the patient and friends.

In those cases where malignancy has developed before homeopathic treatment is begun, malignancy is checked. In those cases where this feature is not present it cannot develop after the patient is turned to order internally, for malignant development and internal order are incompatible.

Cures in Literature.

Some will say, with strong emphasis on the "if," "If these results are possible, why are there not more of them recorded in literature, text books and clinics?" The answer is deplorably easy. There is not more evidence of the influence of medical treatment in these cases because professors and students have been ensnared in the wild clamor after surgery and fads, which have blinded many to the truths of the philosophy Hahnemann established. Instead of being trained as disciples of *Doctrina Homeopathica*, the royal princess of cure, they are steeped in ambitions to obtain quick local effects irrespective of healthy processes. *Materia Medica* comprehension is discouraged, while the power of remedies and value of principles are denied.

The most notable literature on the subject is included in J. Compton Burnett's "Curability of Tumors."

I have found in reports of society meetings * a few cases from the practice of reliable homeopathic physicians, which

* Proceedings of International Hahnemannian Association '82, '83, '86, '93, '95, '97, '98, '00, '01.

may be briefly cited. One of these, L. B. Wells, says, "I could give many others with similar results. I would earnestly persuade my colleagues to treat these cases with the same confidence they do other diseases and not turn them over to a surgeon, who would resort to knife or cautery."

It has been my own privilege, in the past eighteen months, to treat four of these patients with interesting results, as noted below.

Remedies.

What remedies can be relied upon for such results? Any remedy, the image of which is presented in the patient's characteristics, will turn her into the track of repairing disordered nutrition. Sometimes but one remedy is needed. In other cases the first selection helps the patient and prepares the way for another, which completes the work, under which the local trouble is eradicated. Repertories give short lists of remedies that have developed nodules or indurations in the glands, but others may be as useful although this feature of their action has never been noted. To gain good results it is required to find the remedy corresponding to the patient afflicted. This is applied homeopathy.

Cases in Illustration.

I. A patient of sixty-three years of age, (under treatment for more than two years for chronic troubles with improvement,) complained that for ten days she had great sensitiveness and soreness in a lump in the left breast. This tumor, about one inch in diameter, had existed for many years in the lower, outer, part of the breast without disturbance. At this time we called it a sebaceous gland. For three or four days it discharged a thick, yellow, bloody fluid of the odor of old cheese. She complained of faintness, goneness in epigastrium and sensation of falling; worse after 3 p. m., better after eating and from coffee.

The administration of hepar sulph. was followed by improvement for one day, odor less offensive and discharge freer. Two days later the lump lifted from its bed in the tissues and presented just beneath the thinning superficial skin. At this time she complained of feeling generally miserable, with faint weakness. She received conium and, by evening, felt decidedly better. After a day of aggravation of pain in the breast, there were two days of ease and then one night when the pain extended through to the shoulder blade. During this time the lump, gradually loosened all its moorings, the first opening closed, and two others became one. Through this, after the

night of severe pain, the lump was loose enough to be expelled. Externally it was the size of a common marble, hard, with cheesy surface. The cavity left healed rapidly, with little dark discharge, and all indurations of skin disappeared.

II. Miss G., thirty-one years of age, a tall, stout brunette, in March complained of a lump in right mammary gland, which she noticed some weeks previously because of burning pains. Examination revealed a lump two and one-half inches in diameter in the deeper substance more than the superficial, in the upper outer portion of the gland, not freely movable. She had been very nervous about her prospects, because a sister had died recently after a pelvic operation. She had mourned her much. "Soreness of mammae before menses," "induration of the gland," "complaints from grief," together, led to the selection of conium. Constipation, nervousness and breast symptoms all showed steady improvement, while coryza developed. She said she had more colds than she ever had had. In four months, a hasty examination detected nothing of the lump and one year later, careful palpation found no hardness remaining.

III. Another patient, treated with kali-iod., selected on the image presented, reports decrease in size and painlessness in a lump, which was one inch in diameter, in upper inner part of left mammary gland. The general improvement is such that it has been impossible to have her continue the use of her powders two weeks in succession, since last spring, because she feels so well, she neglects it.

IV. A single woman, of thirty-seven years, with quite an array of symptoms, has a tumor two inches in diameter, freely movable, above nipple in right breast, which was first shown five months after she first noticed it. Drawing, shooting, stinging pains, worse when tired and before menses, with drawing in arm as if the cords were short, were relieved by use of sulph. Later-developing symptoms helped complete an image of graphites, on which she is now improving. If this does not complete the restoration to order, it will lead to another remedy to continue the work and there will be no need for local interference in this case.

The following cases are given very briefly without details, as they are reported more fully in the society proceedings from which they are copied. Others may be found in periodical publications.

B. Fincke's Case.

A married woman of thirty years had a tumor in right breast two years previously, which disappeared under treatment. Then one developed in left breast, outside and below the nipple, hard, movable, with a second one overlapping it, one and three-fourths inches in diameter. Under *carbo animalis*, in the course of two and one-half years, the tumors disappeared entirely, leaving the patient quite well.

D. C. McLaren's Cases.

I. A stout Irish woman, forty years old was condemned to operation, with the entire left breast hard, almost stony, nipple inverted. Under conium mac. in one month, the breast was entirely soft, natural as the other.

II. A woman, whose sister died of cancer two years before, presented a breast with a lump, size of a goose egg. Under sulphur a cure resulted in six weeks.

III. An Irish woman, with a large tumor of recent and rapid growth in left breast and nipple inverted, received conium mac. In one month, the breast was in a normal condition, without a trace of hard lump.

Dr. Quackenbush's Case.

A woman of thirty-seven years, suffering with Bright's disease, had a tumor in left breast, five inches in diameter. Under sepiä, she was cured in three months and remained well.

C. M. Boger's Cases.

I. A woman had the left breast and all axillary glands of that side removed. Soon a lump appeared in the right breast. While under treatment with nitric acid (in potency), the tumor disappeared and her excellent health enabled her to do more work than in years before.

II. In a young Irish girl, mammary gland, axillary glands and those between mamma and axilla were all affected. Under calc-fluor, the indurations had almost entirely disappeared at time of report.

III. A married woman of thirty-three years had a nodule, size of a walnut, in left mammary gland, for twelve years. It seemed deep and attached to the ribs. She reported it painful for two weeks. Bella. relieved the pain, but under conium mac. the lump grew steadily smaller till cured.

E. E. Case's Case.

A retired school teacher of sixty-one years had a bunch, size of a hickory nut in left mamma for three months. In two months, under conium mac. the bunch was entirely gone.

H. W. Pierson's Case.

A woman of thirty-seven years, mother of eight children, had been strongly advised to have an operation within two weeks, for what was called mammary cancer. She had arsenicum a few months, then hepar sul. four months, then phytolacca. Three months after beginning the last remedy, the case was reported; gland reduced to one-fourth its size, with some indurated lobules, and the woman one of the happiest in Chicago.

W. L. Reed's Cases.

I. A woman, of forty-two years was seen, immediately after manipulation of a surgeon, in investigating a lump in the left

breast, which he decided was cancer and must be removed. Arnica relieved the pains and made rest, at night, possible for one month. Arsenicum alb. then controlled the case. The tumor grew gradually smaller and softer and in eight months no trace of it was left. Lycop., nat. mur. and bry. were used, as intercurrents, when new conditions presented.

II. A woman, of forty years, mother of several children, reported, among other things, a tumor in right breast, growing, in a year, to the size of a goose egg. During three months, under sulph. the tumor entirely disappeared and she was happy in restored comfort.

L. B. Well's Cases.

I. A married woman, of forty-two years, discovered a hard, irregular tumor, size of an ordinary peach, in breast, three months previous to consultation. After carbo. an. and apis had been given without benefit, the tumor constantly increasing, ars-iod. controlled the pains. In two years the tumor was reduced to one-third its size and later she reported trouble in breast removed.

II. A married woman, of sixty-one years, discovered a hard tumor, size of a butternut, in left breast, where she had sharp, stinging pains for three months. Under ars-iod., pain was controlled and in three years the tumor was reduced to size of a chestnut, soft and painless.

L. M. Kenyon's Case.

A woman, aged twenty-eight years, mother of one child, had a hard lump, size of a hazelnut, in left breast. She first noticed it ten years previously when nursing her child. It gave no trouble until within a few months. Under conium the sensitiveness ceased for six months or more and she thought it diminished in size. In fourteen months she reported that for six weeks it had grown rapidly and was very painful. Menstrual symptoms presented the image of sabina, which was given. The breast pain was entirely relieved and in a few months the tumor disappeared entirely. Up to time of report (fourteen years after) no trouble had been experienced from it.

E. M. Rushmore's Case.

A married woman of forty-five years had a hard tumor in upper part of left breast. The whole breast was exceedingly sore and tender, pains extending to arm and scapula. After six months' treatment with calc. carb. she reports the tumor entirely disappeared and she is well.

Potencies used for these cases ranged from 30th to cm. including 200th, 1m, and 55m.

THE CAUSES AND TREATMENT OF INFANTILE ECLAMPSIA.

BY F. E. HOWELL, M. D.

Convulsions of infancy or infantile eclampsia, are attacks of motor disturbances due to various causes, and represented by continuous rigidity or contractions of one or more groups of muscles lasting for a variable time, and usually accompanied by unconsciousness. In infants they are to be looked upon as symptoms not as a disease.

They may be classified as to type into tonic and clonic; as to form into general and partial; as to seat of irritation into central and peripheral. The probable lesion may be a hyperemic or an anemic condition of the motor areas of the brain.

The clonic convulsion is an active, spasmodic contraction of the muscles followed by immediate relaxation. Epilepsy is an example of this.

The tonic convulsion is a more or less continued spasmodic rigidity of the muscles. Such are seen in tetanus neonatorum.

The seat of irritation is varied. It may be a lesion of the central nervous system, or of the peripheral nerves, i. e., central or reflex.

Convulsions are much more apt to occur in infancy than in later childhood and adult life, owing to markedly increased excitability of the lower reflex centers of the nervous system and the poor development of the higher inhibitory centers. We, therefore, not only meet with convulsive attacks more frequently in early life; but, as a rule, are led to look upon them as of less import than in adult life. The reason for this is that the causes of infantile convulsions are innumerable, and, as a rule, do not result seriously, as in the adult, where they almost always represent a central lesion.

The various acute diseases accompanied by high temperature, such as pneumonia and the exanthemata, are commonly preceded by a convulsion.

But we must not be misled into forming the rule that convulsions in infancy are not fatal because of their frequency and often benign character. We can never be sure that we have a benign form until we have eliminated all serious organic

lesions as a cause. The convulsion itself does not show us whether it is a symptom of serious disease or not. The convulsion from a central lesion, such as cerebro-spinal meningitis, may differ in no way from that due to some simple cause, as indigestible food.

The most important are those of central origin. They may occur in any disease having a high temperature, as meningitis, pneumonia, and the exanthemata, or other diseases. In these cases the convulsion may be produced by the action of the high temperature on the motor areas, or by the direct action of the toxic agents causing the disease. These convulsions, as a rule, are general, caused by the diffuse action of the poison. There is probably an extremely hyperemic condition of the blood vessels of the brain. Convulsions may also be produced by a vascular stasis and a normal or subnormal temperature, as in pertussis or cardiac disease, or from an anemic condition of the blood vessels of the brain as in exhausting diarrheas or from loss of blood. Drugs, as belladonna, mental disturbance, as sudden fright, may produce convulsion. They may be partial or clonic, though, as a rule, they are general, due to the diffuse irritation.

Local lesions, as morbid growths, embolus, thrombosis, and hemorrhage, may be the cause of general convulsions, though, as a rule, they are localized or hemiplegic in character.

Convulsions of peripheral or reflex origin may arise from almost any source. Rachitis is an extremely common cause, laryngismus stridulus being the form here. Irritation from trauma elsewhere in the body, from renal, hepatic, or intestinal colic, undigested food, phimosis, foreign body in the ear, dentition, and worms, and some cases may be looked upon as idiopathic.

The most common cause of reflex convulsion is improper food; even in infants who are fed from the breast the convulsion may be due to too high a percentage of proteids or some disturbance of the mammary function.

The irritation of teeth, during their development, as a cause of itself, is questioned by many observers, though there is no doubt a higher state of nervous excitability during dentition. Hot baths may be a source of convulsion.

In the treatment of convulsion the bath in which the infant is immersed should not be too hot. In one case I had recently

the bath was not only too hot for the action desired, but while it appeared all right to the parents and only warm, as they termed it, it not only increased the severity of the convulsions, but was severe enough to scald the child and hasten materially its death. The temperature of the bath should always be taken and the child removed before recovering consciousness, as the fright of the bath may cause a recurrence of the convulsion. Mustard added to the water in the form of a foot-bath is a great help at times, ice packs being applied to the head at the same time. The ice pack to head is useless unless there is high temperature. It is best to keep the child quiet, and all rubbing and unnecessary manipulation forbidden. The warm mustard bath or pack may be used.

The thorax should be examined for pulmonary or cardiac lesions, and inquiries made regarding the diet and previous condition of the child. The temperature should be taken and the fontanelles examined for bulging.

As it is almost impossible to make any headway in a search for the cause during a convulsion, I usually resort to the use of an anesthetic at once, chloroform or ether, preferably the latter, and empty the bowel by enemata, determining as soon as possible the internal remedy to be used.

If the spasms are of frequent occurrence with short intermissions, I sometimes make use of the rectal injection of 5 to 10 grains of potassium bromide, and 1 to 3 grains of chloral hydrate to an ounce of warm water, repeated every hour for four doses if necessary. Hypodermic injections of morphia sulph., 1-100 to 1-60 of a grain, may be used if the case seems to be nearing a fatal termination. In the class of cases caused by loss of blood, an anemic condition, exhaustive diarrheas, and heart disease, and those with venous stasis and low temperature, stimulants may be given with good results. In exhaustive diarrheas the appearance of convulsions in the later stages is always an indication to me of an approaching fatal termination. In these cases I make use of saline enemas after each stool, allowing some solution to be retained; they are not only soothing, but, I believe, appreciable amounts of the solution are absorbed. I also believe in the use of salines by hypodermoclysis in these cases.

The homeopathic remedies are too well known to need repetition here. I use frequently such remedies as aconite, apis,

belladonna, chamomilla, cicuta vir., cina, hyoscyamus, nux, and veratrum.

I take it that I have only been repeating what is common knowledge to all of us. But these things will bear repetition. It seems to me that a number of physicians have selected some one particular cause for convulsions, and are given to treating cases with this pet hobby continually in the foreground. Yet a little observation will prove that the causes are innumerable, and in a great many cases not in keeping with the symptoms produced. The cause should be searched for carefully and thoroughly and eliminated as soon as possible.

I also wish to emphasize the importance of controlling the attacks as quickly as possible, as the convulsions alone may cause death from exhaustion.

I very seldom find that an anesthetic is not a speedy and safe controller of the spasms, and I make systematic use of it.

The convulsions controlled and the possible cause removed, attention should be directed to toning up the little patient to resist a recurrence, for in the weakened state following these attacks influences which seem extremely slight may cause a return of the convulsive seizure.

In closing, I will cite two cases which I think will fairly illustrate some of the points I have employed in this paper.

The first, a child, 2 years old, had never had convulsions nor any other trouble. She was suddenly taken with convulsions in the evening. On my arrival I found high temperature, 103 2-5°, convulsions lasting from twenty minutes to an hour, followed by sleep. After a while she would awake with a piercing shriek. The head would then be thrown back, the eyes squint, and body stiffen; hands and feet would be cold, the head hot, face red. She would quickly develop clonic contractions, the head being turned to the right, the eyeballs, jaws, hands, and feet twitching. The bowels would move suddenly, and child would sweat profusely on the head; breathing was shallow and hurried; urine passed in small quantities, etc. I give enough symptoms to show that I was well warranted in giving apis, which I did, but with no result. I kept the child under chloroform during the following convulsions, and did what I could to discover the cause. I finally flushed the bowel with a large injection of soapy water with the result that a large portion of the bowel was distended and cleansed, the child

passing a piece of broom splint an inch and a half in length. The convulsion ceased and there was no recurrence. The lesson here is obvious.

The second case, a boy 18 months old, was taken with violent convulsions in the night. On being called I found the convulsions very close together, the abdomen distended, and bowels had not moved. I learned that during the previous day the child had eaten half of a Dill pickle, which he had snatched from his brother's hand. I injected the bowel and the pickle came away undigested. The child quieted down for the night. The next day he had convulsions again. Of course, at this time I gave such remedies as bell., which controlled fever and allayed the symptoms somewhat. I then gave castor oil with the result that there were no more convulsions for that day. I continued the administration of bell., and gave nux in alternation. There was no convulsion for three days, when I was again called. The child, it was said, had eaten a small piece of candy. Whether this caused recurrence or not, the previous methods of treatment failed this time to relieve. By use of the mustard bath, ice pack, chloral, and bromides, per rectum, and the administration of chloroform, the convulsions were aborted in some instances and controlled in others. However, they still continued. I gave santonine 1x for the bowel irritation, but without effect. The symptoms at this time were: Child cries for things which he refuses or throws away as soon as given to him; strikes at his mother; angry, yelling, and at other times fretful, crying; cannot bear to be touched; wanted to be nursed, but did not want to be carried; seemed miserable all the time; would lie with head turned to one side. The face was pale and bluish at times around the lips; dark rings around the eyes. The child would swallow continually; desire to eat, but eating seemed to cause pain at once; abdomen was hard, and somewhat distended; stools were watery; pulse was weak, and child had slight cough. Examination of chest revealed no diagnostic symptoms. The symptoms can be verified by Dr. Harner, who saw the child at this time, and we were both more certain every time we talked over the symptoms that cina was the remedy; nevertheless, administered low, high, and medium it seemed to have little effect save to relieve the angry symptoms. I tried cham., owing to the similarity between these drugs, but the convulsions continued. The child

would tremble between attacks; had a great many more attacks in the night; the convulsions assuming more of the epileptiform variety. He was growing weaker daily. Finally being convinced that there must be some chest trouble, I packed the chest in antiphlogistine for two days and nights, renewing the dressing every twelve hours, and gave *hepar 6x*. By the end of the second day the convulsions had ceased entirely, the cough was loose, and quite a little muco-purulent expectoration. The glands of the neck were swollen soon after this, but went down gradually under *merc*. The child has since had no signs of trouble. The cough is lessening, and he is getting stronger daily. I have brought these cases before you to-night because of their similarity in this one thing. Both cases seemed to have clearly indicated homeopathic remedies, yet both cases needed something in addition. It behooves us, therefore, not to be always so sure of the *simillimum*, but to have other resources to which we may turn when the remedy alone does not work, as procrastinating may lose us a patient in such cases.



PUERPERAL CONVULSIONS.*

BY S. G. A. BROWN, M. D.

So little ~~is~~ ^{is} comparatively known concerning the etiology of puerperal eclampsia that it is difficult to say anything definitely on that phase of the subject. Opinions and theories "change without notice," and the best we can say is that it is due to toxemia. In an able paper presented before the New York County Homeopathic Medical Society (North Amer. Jour. of Hom., vol. liii, p. 452) several theories were brought forth.

"Zangenmeister finds that the blood of the eclamptic woman shows no sign of the uremic etiology of the convulsions, but that there are severe circulatory disturbances present with arterial spasm, . . . toxic irritation of the vasomotor centers being unproven."

"Muller considers eclampsia the result of overwhelmingly rapid entrance of toxins into the circulation," which in my humble opinion is untenable. "Albert argues that eclampsia is due to a latent microbic endometritis," another example of a good man gone astray.

Schmorl and others assert "that during pregnancy fragments of villi or syncytial cells escape into the maternal circulation and that these foreign cells act as a poison to the system, for the neutralization of which an antitoxin is produced by the maternal tissues."

"Weichardt argues that in the process of dissolution of the placental cells by the maternal antitoxin, a new toxin is set free which, if not neutralized, will give rise to eclampsia, and this he calls syncytiotoxin."

"J. C. Hirst asserts that the statement that one per cent. or less of urea is a danger signal is fallacious, and that it is albumen and not urea that is the index." Yet another recent writer declares that the albumen is only the symptom of a more deeply seated trouble. The presence of albumen naturally calls our attention to the serious gravity of the case, but it is yet to be proven that it is an etiological factor in the causation of the disease. One thing seems certain; the kidneys are not excreting the poison in sufficient quantity. This waste

* Read at Pennsylvania Homeopathic Medical Society, Altoona, Pa., September 21, 1905.

effete material is retained in the blood and becomes an irritant poison, and by its action on the vasomotors produces arterial spasm.

Other writers claim that the renal insufficiency is not the primary cause, but that defective hepatic activity is instrumental in bringing about the eclamptic state. This faulty metabolism, however, may have existed for quite a while. Yet another writer claims that the high tension pulse usually seen in connection with perverted kidney function is always associated with a defective action of the suprarenal glands. We are fully aware that even small doses of adrenalin are sufficient to cause a general contraction of the arteries, hence a disturbance of the suprarenal functions would naturally interfere with a free circulation of the blood through the kidneys, likewise would cause perverted liver activity, cardiac hypertrophy, and the attending cerebral symptoms. We all meet cases of neuralgia, headache, and undefined nervous symptoms, which are not relieved by the usual treatment. The urine may show no casts nor albumen. The urine is usually scanty in these cases. Urea and acid phosphates are always diminished, while uric acid may be in excess. These patients suffer much with headaches and are more or less mentally despondent.

Eclampsia never comes on suddenly and without warning, a high authority to the contrary notwithstanding. Headache, backache, vertigo, constipation, insomnia, nosebleed, dyspnea, scanty urine, edema of feet, ankles, or face are all forerunners of some serious internal metabolic disturbance. True the convulsions come on suddenly, but there are always premonitory symptoms. Unfortunately the physician is not always informed in the early stages. The disease pursues a rapid course, usually culminating in or near the full parturient term. One author claims that every attack is preceded by vomiting, a statement which I cannot corroborate in my limited experience of four cases.

Concerning the treatment authors differ. Preventive treatment is best. As this paper deals with eclampsia proper, however, we shall endeavor to speak only of the treatment to be employed during that auspicious period. The spasms, which when once seen will never be forgotten, must be controlled. Chloroform inhalations are invaluable but not infallible. However, it should be used in all cases. Morphia in 1-4 to 1-2

gr. doses hypodermically is also a useful adjunct, notwithstanding its depressing influence. Perhaps I hear some say this is not homeopathic; but I wish to state that we are dealing with a violent poison, and that while morphia has a tendency to check elimination, it likewise through its action on the vasomotors relaxes the spasm of the arteries.

Norwood's tincture of veratrum viride, 15 to 20 gtts. hypodermically, is undoubtedly beneficial. Repeat every half hour. Cuprum ars. 2x, every half hour until relieved, should not be forgotten. Thyroid extract is valuable in threatened eclampsia because of its vaso-dilator propensities. It stimulates metabolism and is a prompt eliminant, especially of urea. Glonoine I have used with eminent satisfaction. Give the 2x every half hour, carefully watching its effects. This being a dangerous acute affection, dosage must be pushed. Pilocarpine 1-24 gr. aqueous solution may be given hypodermically to induce diaphoresis and diuresis. Repeat every half hour until sweating occurs.

Transfusion of normal saline solution is one of the remedies par excellence. The chief precaution is surgical cleanliness. The best locations for the infusions are the loose tissues, especially those under the breast. Be sure all air has passed from the apparatus before inserting the needle. Some physicians advise the instillation of a few drops of cocaine two per cent. solution before the introduction of the needle, but this is wholly unnecessary as the patient's intellect is usually already clouded. After the needle is inserted, raise the solution-container high enough to cause an easy entrance of the fluid into the tissues. Do not force the solution faster than absorption takes place. Distention of the tissues is unwarranted and dangerous. It is well to watch the temperature, and when it has fallen below 101° F. the transfusion may be dispensed with. After the withdrawal of the needle close the puncture with sterilized cotton and collodion.

Lumbar puncture for the relief of intracranial hypertension probably exerts a favorable influence on uremic poisoning. I have tried it in but one case, so cannot speak with authority. The best authors recommend using a medium-sized trocar of about 8 cm. in length, with a lumen of 1.5 mm. for the free flow of the cerebrospinal fluid. Place your patient in the left lateral position, thighs flexed on abdomen; introduce trocar between

3d and 4th lumbar vertebræ. The instrument passes downward and slightly outward beside the spinous process, and as it enters the canal, the sensation to the touch is unmistakable. The fluid will spurt from the canal because of the internal pressure.

In conclusion, I would add that it is of course understood that should the convulsions appear before delivery, that should be accomplished as rapidly as possible with safety to the mother. As a general routine remedy during convalescence nothing succeeds like cuprum ars. 3x.



THE INDICATIONS FOR OPERATION.

BY RUTHERFORD MORISON, M. D.

Prevention of Sepsis.—The most necessary and the most successful operations are performed for the prevention or for the arrest of sepsis. For instance, in the case of appendicitis, operation is required when the risk of peritoneal infection is obvious, and there is no other definite indication for operation. In cases of appendicitis in which the patient can attend to business regularly, it is doubtful whether removal of the appendix is useful or even justifiable. "But in cases that commence with acute pain and vomiting, and are attended by inability to rest, elevation of temperature, quickening of pulse, tenderness and rigidity of the abdomen, the sooner operation takes place the better. Where some doubt has been felt at first, none should remain at the end of twenty-four hours. Every case in which all the symptoms and signs are not improved in that time requires operation; it is not enough that there may be betterment in some of them. A rule of immediate operation in acute cases would prevent much prolonged illness from abscess and many deaths from general peritonitis; but in the peritoneum, as elsewhere, septic inflammation which has started may be impossible to arrest, and when once it has been fully established, operation frequently does more harm than good. The same truths may be recognized in other abdominal emergencies. If, for example, a ruptured gastric ulcer is not recognized till peritonitis has been established, the patient had probably better be left alone. The chief object of the operation is to prevent or to arrest peritonitis; the repair of the ulcer is only a part of this."

Also, in cases of acute intestinal obstruction the most frequent cause of death is blood-poisoning. These cases require early operation, and a few hours' delay may make the difference between recovery and death. When the intestines are distended it is the best rule to do enterostomy through the smallest possible opening, with the object of arresting blood-poisoning, and to complete the operation at a later stage, if the patient survives.

In the case of the kidney, the X-rays may show a stone, and enable an early operation, avoiding the septic suppuration which may occur later. In cases of gall-stones an early operation will avoid the mischief caused by suppuration and abscess of the liver, etc. Gall-stones may, like renal calculus, remain for years without causing symptoms, which only occur when sepsis is superadded. When this occurs they require immediate operation. Gall-stones first show their presence by attacks which may be mistaken for stomach troubles. Post-mortem examinations show that death not infrequently occurs from gall-stones which have escaped diagnosis. In the later stages many cases die from the operation in their enfeebled condition, while others are not cured because it is impossible to remove stones from all parts of the liver and bile-ducts. When the sepsis and stones are confined to the gall-bladder, operation is safe and satisfactory; but when the stones have escaped into the ducts, and have caused liver abscess, operation is dangerous and difficult.

The fact that mouth sepsis, ear sepsis, and throat and nose sepsis are a menace to health and life is not even yet sufficiently recognized, or, at least, if it is, the knowledge is not sufficiently acted upon. To remove all of these conditions should be regarded as a necessity, and if their removal, as it sometimes does, demands a serious operation or operations, these must be faced. No patient should be left with the septic focus if by any reasonable possibility it can be removed. It is only because the dangers of such foci are frequently obscured and delayed that their connection with serious illness has not been more often proved. It is often even now said of persons with discharging ears that the discharge does no harm, and has lasted for many years without result. Every surgeon knows the mortal consequences of middle-ear suppuration, and does not hesi-

tate at any measure which promises to arrest it; there are other forms chronic suppuration elsewhere, not less deadly.

Arrest of Hemorrhage.—The surgical rule—to see the bleeding point—has not been exaggerated in importance. Secondary hemorrhage, after injuries or operations, is now uncommon, owing to the prevention of sepsis, and possibly, owing to its rarity, treatment may not always be prompt. It is often easily arrested by a pad and bandage, but recurs a few days later. If it does so, the bleeding point should be seen and secured. This may involve a considerable operation, but that should be no deterrent. “Hemorrhage which has more than once recurred is almost certain, sooner or later, to lead to a fatal result unless boldly attacked.”

Gastric ulcer appears to be an exception to this rule, but, in spite of the difficulty in finding the bleeding point, in cases of recurrent hemorrhage from the stomach it is best to operate.

In cases of ectopic gestation, operation should follow the diagnosis, before the case has ruptured and the abdomen is full of blood.

Abdominal Wounds.—One of the lessons of recent wars was “to leave punctured wounds of the abdomen alone.” The same rule applied in civil practice ends in disaster. It should be a rule that no wound of the abdominal wall must be left without full exploratory operation. By this it is not necessarily meant that the abdomen should be opened, but that the track of the wound should be followed to its end.

Certain abdominal injuries require immediate operation, and the question of opening the abdomen is often a difficult one to decide. The history of the accident and the physical signs must decide the question. When the history is one of a sudden severe localized blow, such as the kick of a horse, severe visceral injury is so probable that operation is as a rule indicated. When there is severe shock after an abdominal injury, careful watch should be kept, and opium avoided. Increasing pallor and thirst and restlessness, with increasing rapidity of pulse, suggest internal hemorrhage, and the need for prompt interference. Continued severe pain, local tenderness, muscular rigidity, thirst, vomiting, and a quick pulse suggest a leak in the gastro-intestinal tract, and the need of an exploratory operation. If operation is postponed till septic peritonitis has developed—and this often occurs in a few hours—it may be

useless or harmful. Radical operation should never be done when the abdomen is much swollen and thin, for if the intestines are not already paretic, the operation will make them so. An enterostomy under local anesthesia is the largest operation which should be performed under these conditions, and may be useful whether the condition is due to mechanical obstruction or to peritonitis.

Tubercle and Cancer.—Every tuberculous gland in the neck is a source of danger, and should be removed. If extensive glandular infection is found, neither the immediate nor the remote results of operation are likely to be perfect. The same applies even more to cancer. In both the best results are only obtained when the disease is local and limited. A limited amount of disease may possibly be rendered innocuous temporarily or permanently by the surrounding healthy tissues. This holds for tubercle and perhaps for cancer, and no other explanation can be given for the long immunity after operations, which we now regard as partial, done by the older surgeons; and nothing else will account for the delay of local recurrence till many months after operation. The germs of a great many diseases can, and do, lie inert in the tissues ready to become active under favorable conditions, but are kept in check so long as the tissues are healthy. Contrary to accepted surgical authority, which teaches that, unless it appears to be possible to remove the whole disease, operations for cancer do more harm than good, my experience is that in selected cases a satisfactory result may follow partial operation. In the case of tumors of the stomach and bowel, it may be justifiable for mechanical reasons alone to excise non-localized malignant growths. In other regions, too, I would suggest that, when a large mass of malignant disease can be safely extirpated, it should be done, even though glands or other deposits must be left, if it is in a position where sepsis is avoidable.

Septic infection superadded to cancer or tubercle increases the risks and sufferings of the patient. In cancer of the cervix uteri in virgins, the disease is not attended by the usual symptoms of early hemorrhage and profuse fetid discharge. Hemorrhage occurs late; fetid discharge if at all, not till after vaginal examination. The first evidence of cancer in virgins, and often in widows, is bladder trouble, with pains in the course of one of the pelvic nerves. Examination shows an inoperable

fixed mass of malignant disease in the pelvis. In such cases it is possible to prolong life and relieve symptoms by arresting sepsis. The sharp spoon and regular antiseptic dressings may be successful for months, and in some cases for years.

Morison is of opinion that cancer is increasing out of proportion to the increase in population and that the increase is shown chiefly in cancer of the gastro-intestinal tract, especially of the colon. A normal history of these cases is increasing constipation, flatulence, and borborygmi. There may be loss of flesh, but often a healthy appearance. Digital examination per rectum may discover a growth at the lower end of the sigmoid flexure; or if too high, it may be shown by the sigmoidoscope. In women the growth may sink into Douglas's pouch and be mistaken for a diseased ovary. If not more than a pint of enema can be retained, this supports the diagnosis. In such cases an exploratory operation should be done without delay. If a growth is found, removal and anastomosis may avoid the need of a later colotomy, which in many instances is a worse calamity than death itself.

Tubercle of Joints.—By the X-rays tubercle may be localized in bone before the joint is involved, and operation should be performed in time to prevent invasion of the joint. Excision of the whole synovial membrane precludes the possibility of recovery with a perfect joint. Hence in tubercle of the joint, in some cases it may be necessary to break the rule for removal of all the tuberculous tissue. In all cases tuberculous infection may be complicated by sepsis. In children up to twelve years of age recovery without any operation usually follows complete and prolonged rest. In these cases even septic tuberculous joints may recover. In young adults the same result may occur, but interference with the function of the joint is more likely.

If recovery is to result in loss of the functions of the joint, I believe excision to be the best treatment. By excision I do not mean the operations described in the text-books as such, most of which should be abolished, but thorough exposure of the joint and the removal of all the diseased tissues and of the cartilage covering the ends of the bones, to allow of cure by bony ankylosis, which in advanced cases is the best result to be expected. The test I employ as to whether this is desirable or not is the amount of movement obtainable under an anes-

thetic. If there is fair movement, excision is not justified; but if movement in every direction is much limited, recovery is quicker and more satisfactory after excision. After the age of fifteen years and up to that of thirty-five, if a joint is septic as well as tuberculous, excision should be the rule.

The wrist is an exception to this rule, and may be treated by prolonged immobilization, treatment of the septic sinuses, and attention to the general health. After thirty-five the prognosis of tuberculous joints is bad, and increases with every decade.

Current Comment.

W. Sloss, M. D.:

I am not prepared to say that in every case of *sepsis in the puerperium* the infection is introduced through the vulva, for I doubt it; but I dare say we are all agreed that the majority of cases which become septic do so by organisms introduced into the genital canal from without, and that streptococci are not conveyed by the atmosphere. For all practical purposes the uterus and vagina are practically aseptic. The liquor amnii (an aseptic, saline fluid), the blood, the placenta, and membranes all tend to wash out the canal from above downwards. One great source of danger is in the patient herself. The vulva is very septic, and my usual recommendation, among other things, at the time of engagement is for the patient to take frequent sitz baths. A woman will usually do this if she is told that it softens the parts and gives her an easy time. Vaginal examinations and internal manipulations are in most cases in normal labors necessary to the general practitioner. Before any examination is made I make it the practice to wash thoroughly the external genitals with my own hands. It is absurd to think that the obstetrician should do his aseptic work under the bedclothes, and therefore I say, that the external genitals of the patient must be exposed to view, and the labia should be separated with the fingers of the other hand. The examining finger must not touch anything before it is introduced. Before doing this I usually wash my hands, then put on an operating jacket, then disinfect my hands with lysol, and

wash the patient's externals with the same. For disinfecting the hands I know of nothing more important than hot water, soap, and a brush. If very septic, follow this with solution of potass. permanganate and oxalic acid. Corrosive sublimate is good, but astringent. Don't hurry the labor, until necessary from the patient's standpoint, but a prolonged labor is a dangerous one, not only from the exhaustion probably killing the patient, but because of the greater liability to sepsis from the lowered vitality of the tissues. Therefore, as soon as you find that natural efforts are not sufficient to end the labor within a reasonable time, interfere early, and do not wait until the natural efforts have completely failed.

The right management of the third stage is probably the most important part in the prevention of sepsis. If any part should be left behind, the uterus may expel it, but will probably wait until the dead tissue has become an excellent nidus for the proliferation of bacteria.

I have tried douching in normal cases after labor, but if the work is done aseptically I cannot see the good it will do, while there is also the danger of introducing germs from without as well as washing out that protective substance, which, I am convinced, is in the genital canal.

I once asked Berry Hart what was the best thing to do with tears in the perineum. "Don't have them," said he, most emphatically. Supporting the perineum will not always act. The method of introducing a finger into the rectum may be good; but, in my opinion, if the bacillus coli communis is an etiological factor in puerperal sepsis, it should not be done. "Leave alone" was tried in the hospital until there were too many perineums to stitch. The forceps I think a very good method of keeping the perineum from tearing. A torn perineum ought to be stitched, and the best results usually are obtained by using silver wire.

After the third stage is completed I seldom, if ever, hand over the patient to the nurse until the externals are thoroughly cleansed and a clean diaper applied.

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C. L. Hall, M. D.:

I insist that much can be accomplished for the relief of the *obstetrical patient* and in the termination of labor by the judicious use of the examining finger or fingers.

I speak from personal experience and practice, but will encounter the severe criticism of the technical obstetrician, for I am confident I violate at least one prohibitive injunction so clearly insisted upon by text-book and teacher, viz.: The frequent use of the examining hand. (It should not be necessary to insist that the hand should be clean and every precaution taken to avoid introduction of infection from without.)

First, as everyone puts into practice, to determine the position of the child.

Second, the use of two fingers to dilate the os. These, the best of all dilators, can be carefully introduced within the dilating os, and by careful pressure from within out, cause, without injury, the dilation of the os, and thereby shorten the first stage of labor.

This being carefully accomplished, the attendant can withdraw to an adjoining room and wait for the expulsive pains, avoiding meddlesome interference, but with the increase of the expulsive effort, his place is at the bedside of the patient. I insist that at this stage of labor, his presence has at least a beneficent psychical effect, and more, it is within his power to render substantial assistance by the use of the examining hand in further aiding dilation of the os and stretching the perineum, and with the other hand on the fundus, steadying and correcting the obliquity of the uterus, and by making pressure synchronous with uterine contractions. By these manipulations the expulsive efforts are guided in the right direction and the obstetrician is constantly apprised of the progress of the labor.

Granting the efficacy of chloroform at this stage of labor and earlier, in some cases of rigid os, I want to deprecate the indiscriminate and reckless use of this "Godsend" to the parturient woman. The early use of it not only in many cases modifies Nature's efforts, but the patient becomes an early slave to its influence and relies upon its seductive effect to the abrogation of all voluntary effort. I confess to a timidity of the prolonged administration of chloroform in the interest of the viability of the child. I fear the death of the fetus can often be traced to chloroform narcosis. It is certainly wrong to thus abuse so valuable an aid in the obstetrical art.

Chloroform should rarely be given to the extent of complete anesthesia, even in instrumental delivery, for by so doing we fail to get the important expulsive assistance of the patient.

I can suggest nothing of more importance in the management of the case following delivery than strict attention to the position of the uterus in the process of involution. I am convinced from my gynecologic experience that this is very much neglected by those who attend women in labor. It is surprising and altogether illogical that the lying-in woman should be compelled or even allowed to remain on her back during the process of uterine involution. Take a woman who before impregnation had a retrodisplaced uterus and permit her to maintain the position of dorsal decubitus following delivery, it naturally results that the heavy organ will gravitate and will assume its old position to the annoyance and discomfort of the patient.

Nor is it necessary that the patient should have had a backward displacement of the uterus for a like result to follow a like cause. The ponderous uterus, with its ligamentous supports in a condition of subinvolution, needs little encouragement to fall back into the hollow of the sacrum, which if not early detected and corrected, leads to months—yes, even years—of discomfort. This should not be and will not be in the hands of the painstaking obstetrician. Within the first two weeks following confinement, if at any time the uterine fundus cannot be felt behind the symphysis pubis, suspicion should be aroused as to the position of the organ, and with sterile hands vaginal examination should be made and almost invariably a retroversion or a general sagging of the uterus will be detected. My own method in trying to avoid this condition is to instruct the nurse to keep the patient off her back, especially after the first few days following delivery. I also explain to the patient the importance of lying upon her sides, the upper knee in advance of the lower, thus tilting the pelvis toward the front and abdominal contents down. In addition to this precaution, the patient assumes the knee-chest position daily, beginning about ten days after the birth of the child.

In treatment of women within the child-bearing period, who are suffering with displaced uteri and associated endometritis, I advise, after overcoming the latter, that they become mothers and thus avail themselves of this best of all methods for correcting the malposition. Results have justified the means employed.

A. Brothers, M. D.:

A question which deserves consideration is concerning the *safety of opening the abdomen in the pregnant woman*. This question arose in my work during the past year five times. Briefly reviewed, the uterus was emptied of a dead fetus, and, two weeks later, a large ovarian cyst was removed by laparotomy in the first case. In the second case abortion followed the opening of the abdomen for a pus-tube with a sacculated intra-peritoneal collection of pus. Two ovarian cysts were removed in two other cases without interrupting pregnancy; and in the fifth case, an extensive myomectomy was done on the pregnant uterus with the same result. A sixth case occurred in the seventh month of pregnancy, when, after a fall in the squatting position, the woman miscarried and on the ninth day was subjected to a laparotomy for an intra-peritoneal abscess, in the walls of which a gangrenous-looking appendix and right-sided adnexa were found.

It would be absurd to make sweeping deductions from these five or six cases. But the fact remains that these six women operated on during pregnancy or in the early puerperium, made uneventful recoveries. The grave fear of operating on the pregnant woman should be modified in the light of modern aseptic methods. Such operations should not be undertaken lightly, but, when the occasion arises, there need be no hesitancy in their performance.



W. A. Lane, M. D.:

It is now more than thirteen years since I devised the operative procedures in the *treatment of simple fractures of the long bones* which I have systematically employed since with uninterrupted success.

The operative treatment is comparatively simple in the large majority of cases, and if due care be taken and reasonable skill be exercised the risk is practically nil.

In a certain small proportion of cases the bone may be too friable or too thin or too much broken up, and the surgeon may therefore be unable to restore it completely to its original form. Even in these circumstances he can almost always obtain a much better result by operating than by any other form of treatment.

In performing these operations, not only must you not touch

the interior of the wound with your hands nor permit the patient's skin to do so either, but you must never let any portion of an instrument which has been in contact with your skin or with that of the patient touch the raw surface. All swabs must be held in forceps and applied to the wound in that manner. They should not be handled in any way previous to being used. After an instrument has been used for a length of time, or forcibly, it should be reboiled or placed in a germicidal solution.

The details of the operation are as follows: Get the skin thoroughly clean. This may sometimes take several days, as the thick indurated epidermis of the foot and knee is often difficult to remove. I find large moist compresses with careful scrapings most effective in enabling one to get rid of suspicious material. When this has been properly done, a germicide should be applied to render the skin as clean as possible. Choose a situation for your incision which will involve a minimum chance of damage to important structures and a maximum advantage from the point of view of accessibility.

Do not hesitate to make an incision of a length sufficient to enable you to deal effectually with the fragments. There is no greater mistake than to increase the difficulty of the operation by employing too small an incision. Its length adds in no way to the risk the patient runs, but usually adds to his safety, since it enables the surgeon to deal with the fragments more readily. Having made the incision, exclude the skin of the patient from the wound. This can be done very well by attaching sterile cloths to the cutaneous margins of the incisions by forceps.

The fragments are exposed and examined, and when all clot and material intervening between them have been removed they are brought into accurate apposition. To do this much traction may be necessary, combined with the leverage action of elevators and the approximating influence of powerful long-handled forceps. The long forceps I employ are very powerful, and are made with a limited grasp to facilitate their use.

If there be any bleeding, I employ strong compression forceps long enough to allow that portion of the handles which have come into contact with the fingers to protrude beyond the area of the wound. Their grip is sufficiently firm to occlude the vessel if they are kept on for a time, and so the necessity for a ligature is obviated.

Having obtained accurate apposition, you employ screws, silver wire, or staples to retain the fragments in apposition. In some conditions one of these instruments is more advantageous than another, while in others they may all be used advantageously to obtain a perfectly firm secure junction.

Generally speaking, the screw is by far the most efficient and most powerful means by which the fragments can be retained immovably on one another. Remember, in gauging the size of the drills you intend to employ in drilling the hole for any particular screw, that the caliber of the barrel of the screw is much larger than that of the thread, and that an aperture in dense bone which readily admits the thread may be much too small for the barrel, and, if the screw is driven into it, the bone may be hopelessly comminuted. The drills and screw-drivers should be of sufficient length to avoid any risk of the fingers touching the wound. If silver wire be employed it should be pure, and before use it should be raised to a red heat in a flame to increase its flexibility.

If you expect much oozing, a drainage tube may be employed for a day or two with advantage. In most cases a splint is required after the operation, but occasionally, as in fracture of a femur ankylosed at the hip joint in a position of considerable flexion, it may be impossible to employ any support.

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J. L. Thomas, M. D.:

Dr. Lane's report reminds me of the remarkable development of the *operative treatment of fractures* which has been evolved by Dr. Lambotte of Antwerp, and as I had the privilege of seeing and examining several old cases which had been treated by him, and also of seeing some under treatment when I was on a visit to his clinic, I desire to draw attention to a method which struck me as being ingenious, bold, and daring, and founded upon sound mechanical principles.

The good old surgical rule of fixing the joint above and below the seat of fracture is absolutely ignored. Dr. Lambotte aims at end-to-end apposition in broken bones. The instruments he uses for bringing broken bones into a straight line are large and powerful, and the means by which he keeps them in that position are novel, and at present not well known. Dr. Lambotte's screw is certainly the mechanic's ideal *tria juncta in uno*—drill, reamer, and screw in one; the point acts as the

drill, a small flattened beveled shoulder acts as the reamer, then follows the screw with its head and the ordinary groove for the screwdriver; but an ordinary screwdriver is not used; in its place a simple mechanical device is fixed into a brace-bit which clutches the screw-head and groove. All one has to do is to attach the screw to the brace-bit and drive it home.

The splinting of the broken limb is entirely confined to the particular segment of the limb which is under treatment; the joints are quite free. The splint consists of a round steel bar to which are fixed the long special screws which act as the retention apparatus. A short report of one of the cases I saw will serve as an illustration of Dr. Lambotte's method of treatment. Skiagraphs showing the broken bone before, during, and after treatment were shown me.

A case of simple fracture of the femur in two places will illustrate:

A man aged about 30 fractured his thigh about two and a half years ago. The first skiagraph showed fracture (1) immediately below the trochanter minor with the usual flexion displacement of the upper fragment; (2) a fracture at junction of middle and lower third of femur, with marked displacement.

An incision had been made on the outside of the thigh, and extended from the great trochanter to the outer tuberosity of the femur—practically the whole length of the thigh. The special screws which are attached by a collar to the steel bar splint were inserted—one into the great trochanter and the other into the outer tuberosity of the femur. The upper and the lower fractures were then fixed in the normal line of the femur by more screws, and the steel bar passed through the collar attachment of the various screws and fixed by suitable adjustments. The incision closed except where the screws projected. The dressing was applied between the steel bar and the skin. The result was all that the patient desired, and the skiagraph showed a straight femur.

Dr. Lambotte has not had any special difficulty in making his cases run an aseptic course, although the screws which are fixed by the steel bar outside are left in the bone for three to six weeks and then removed.

F. F. Simpson, M. D.:

In my opinion *anesthetics are capable of inflicting as great injury* as any other feature of an operation. Some years ago it was my privilege to study the effects of ether upon healthy kidneys in one thousand major gynecological operations. Transitory albumin and casts were found in seventeen per cent. of the cases. The quantity of ether varied between six and ten ounces at that time. In a recent series of one hundred cases the quantity of ether has been reduced to less than four ounces and albumin and casts to six per cent. of the cases. The reduction in general depression has been even more striking, and convalescence correspondingly smooth.

The more we measure individual resistance and the influences which depress it, the more capable we become in controlling those forces.

In this series of 100 consecutive abdominal sections 33 had a period of preparation exceeding four days, as follows: Lacérations and displacements, 3 times; inflammation, 20 times; uterine fibroids, 2 times; ovarian cysts, 2 times; ectopic gestation, 5 times; carcinoma of uterus, once. The maximum period was three months.

The average quantity of ether used was about 3.9 ounces.

Post-operative vomiting was severe 8 times, slight 27 times, and absent 38 times in 73 cases where definite record is available.

The average quantity of urine for the first 24 hours, noted in 72 cases, was 17.2 ounces.



G. Baughman, M. D.:

In making the external abdominal examination for *diagnosis of pregnancy at term* it is well to follow a definite method, and not to have a hit or miss system. Out of the chaos of external examinations advocated, Geheimrath Leopold, of Dresden, has arranged the best system. He directs that the examinations be made in the following order:

(1) Sitting on the right side of the reclining woman, the finger tips are placed together and the hands slide over the abdomen from symphysis to fundus. When the fundus is reached, the hands envelop it and the distance beneath the ribs is ascertained in finger breadths. This movement gives us much

information: (a) the size of the uterus; (b) the relative amount of amniotic fluid present; (c) the power and thickness of the abdominal walls; (d) whether the fetus is in a cross or lengthwise position.

(2) Beginning at the fundus with the hands lying flat, the fingers are pressed into the uterus, the hand on the one side pressing uniformly in, while the hand on the opposite side presses in finger after finger. This movement is continued on each side from fundus to symphysis until the parts of the child are well made out.

This movement gives us (a) the head or the breech in the fundus, or, in case of a cross position, the absence of these parts there; (b) the long, curved back on one side or the other in the case of a lengthwise position; (c) the presence of small parts on one side or the other (the foot, when pressed upon, will kick, the hand will usually be withdrawn); (d) the activity of the child.

(3) The thumb of the right hand is extended from the compressed finger as far as possible. The arch between the thumb and fingers is pressed into the lower portion of the abdomen just above the symphysis, until a marked resistance is felt; then the fingers and thumb are brought together and the part of the child between them is felt and carefully examined.

Of all the movements, this is the most important. With its aid we are often able to diagnosticate the position without bringing the other movements to our aid. It demonstrates to us (a) what part is presenting (the head is hard and resisting, the breech soft, the small parts can be readily ascertained); (b) it gives us an idea of the fixity of the part, *i. e.*, whether the woman has entered into labor; (c) if it is the head, the position of the fetus can be readily made out (the sharp, pointed forehead can be distinguished from the rounded occiput); (d) the size of vertex within our grasp, indicates whether the os is completely dilated or not; (d) it shows that the fetus is narrowed and indicates what variety of contraction we have to deal with a generally contracted pelvis; if the head stands high and is pushed over the symphysis, then we are probably dealing with a flat pelvis, etc.

(4) The physician stands with his face towards the patient's feet; the palms of his hands are towards the abdomen and he thrusts his hands on each side, into the true pelvis from

above. This is used only when the head has passed through the os and is on its way to the outer world. It again indicates the position, because the pointed bregma can be found on one side or the other.

(5) The fingers are pressed upon the labia and the position is felt without entering the vagina.

Leopold proves his diagnosis of position before birth by the heart sounds. The diagnosis of position is made, and the point between the shoulders is marked with the finger. If the heart sounds are not loudest at this point, then the diagnosis is incorrect.

The internal diagnosis is to be resorted to as a last resort; but the skilled obstetrician ought never to be compelled to use this merely for diagnosis.

The size of the child, and particularly the adaptability of the fetal head to the pelvis, can be ascertained during the abdominal maneuvers.

The state of the fetus' health can be found out by its activity and by the frequency and regularity of the heart sounds, bearing in mind always that the fetal heart sounds disappear during a firm contraction of the uterus. Arrhythmic and pronouncedly accentuated sounds are suspicious. When both of the heart sounds become accentuated, that alone is often sufficient to justify the use of forceps.

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R. B. Hall, M. D.:

To show that an *early diagnosis of primary cancer of the body of the uterus* is possible—that is, that a diagnosis can be made while the disease is yet very limited in extent—I will mention two cases. Of the many cases of cancer of the body of the uterus coming under my observation only these two were seen early enough to make a diagnosis while the disease was limited to a very small area.

Adeno-carcinoma was found to be the variety of the disease in each case. It is this form of the disease that most frequently attacks the body of the uterus, and if recognized early it promises great immunity from recurrence. The disease can be diagnosed in its incipiency if we systematically curette every suspicious case and make repeated microscopic examinations of the scrapings removed from the uterus until we confirm or disprove the presence of malignant disease.

Mrs. B., aged fifty years, mother of three children, wife of a physician. At the age of forty-six and one-half years, after suffering from the reflexes of menopause for a half year or more, she was annoyed by irregular bleeding between her periods. This continued for three or four months. Her husband examined her and excluded cancer of the cervix. He could not find any cause for the bleeding. The uterus was three inches deep. The patient was pale and anemic but rather fleshy.

On December 12, 1900, she was given an anesthetic and the uterus was thoroughly curetted by the writer. The scrapings were carefully examined with a microscope by a competent man and pronounced negative. This curetting stopped the bleeding and she menstruated irregularly for five or six months. At this time the periods became prolonged and irregular bleeding commenced between the periods. She became anemic from the loss of blood and was greatly depressed mentally for fear of cancer. The symptoms gradually grew worse, and in January, 1902, another examination was made. She was given an anesthetic, the uterus was thoroughly curetted and careful search was made for any roughness or irregularity of the inner surface of the uterus. The microscopic examination, like the former, was negative. The curetting controlled the irregular bleeding and she menstruated regularly for several months. The latter part of 1902 she commenced to lose too much blood at each period, and soon afterward had irregular bleeding. Having received no permanent benefit from either of the curetings, and as the microscopic examinations were negative, she was not willing to have it repeated; therefore, it was delayed for several months. The bleeding became almost constant and the anemia was very marked. On April 1, 1903, she was curetted for the third time, and careful microscopic examinations were made with the same negative result. The curetting, however, stopped the bleeding for a few months, when it commenced as before and continued, with more or less intermission, until April, 1904. At this time she was profoundly anemic. She had not lost flesh markedly, but was very weak and greatly depressed mentally. The uterus was three and a half inches deep and was very soft. She was curetted for the fourth time on April 12, 1904, for diagnostic purposes. At this time a little roughness

was felt at one cornu of the uterus. With a small, sharp curette I was able to remove a piece of tissue about the size of a half a pea, which was whitish and hard. This was examined and found to be adeno-carcinoma. The patient was subjected to a vaginal hysterectomy on May 5, 1904. The patient had an easy convalescence and is enjoying excellent health.

The clinical history of this patient, from the first, would lead the clinician to suspect malignant disease, yet the careful investigations made at each curetting gave negative results. I would not like to say that malignant disease was present from the first, yet it is possible that it was. After the uterus was removed and laid open the malignant growth was found to be almost perfectly round. It occupied the position indicated, and extended from the mucosa to the peritoneal covering. It was imbedded in the muscular tissue very similarly to a small fibroid. There was no other manifestation of disease; neither was there a single fibroid in any other part of the uterus.

The case is an interesting one from a clinical standpoint, and should encourage us to persevere and try to make as early a diagnosis as possible in all suspected cases by curetting and careful microscopic examination of the scrapings.

The second case, in which a diagnosis of a very small malignant growth was made, was that of Mrs. K., aged sixty-one, mother of four children. The patient passed her menopause at forty-two and had always enjoyed most excellent health. She is the wife of a farmer. Early in the year 1904 she commenced to complain of a little vaginal discharge, and later of a slight pruritus. In April she had a little bloody discharge, lasting for a day or so. She consulted her physician. He examined her carefully, suspecting cancer of the cervix. This was not found, neither could he discover any cause for the discharge of blood. Her general health was excellent. She had the bloody discharge three or four times up to the time of her visit to me, on July 14, 1904. At that time the uterus was three and a quarter inches deep and was somewhat softer than it should be. She had a slight muco-purulent discharge and the pruritus of which she complained. I suspected malignant disease of the body of the uterus. She was given an anesthetic and the uterus was thoroughly curetted. In the left cornu

was a little irregularity. With a sharp curette I was able to remove a small portion of whitish tissue with the other scrapings. This bit of whitish tissue was not larger than half a pea, but was quite hard, differing from the other scrapings in that particular. The pathologist reported that it was adeno-carcinoma. I was just leaving the city for my summer vacation, and for that reason the operation was deferred.

On September 8, 1904, vaginal extirpation of the uterus was made. The patient made an easy recovery. When the uterus was cut open the little growth was found occupying the muscular wall in the left cornu of the uterus and extending about two-thirds of the way through the muscle from the mucous surface. It was perfectly round and a small bit projected into the uterine cavity.

These cases are of unusual interest. Cancer of the body of the uterus is usually far advanced before the diagnosis is made. The causes of this are manifold. Occurring as it does about the menopause or soon after, when women are prone to attribute all irregularities and unusual discharges to the menopause, many of these patients do not consult their physician until the disease is far advanced. Many of the cases who do consult physicians are treated expectantly until they have a sharp hemorrhage or until the pain becomes so severe that they demand relief. All women about the menopause should be examined carefully just as soon as they commence to complain of an irritating or a bloody discharge at irregular intervals, or of any other symptoms referable to the pelvic organs. If no definite cause can be found in the vagina to account for the conditions and there is no disease of the appendages, the uterus should be examined carefully under an anesthetic, a thorough curettage made and a careful microscopic examination made of the scrapings. If the disease is one of simple or senile endometritis this is the correct treatment for it, and the sooner it is carried out the better for the patient. If malignant disease is present the diagnosis may, and probably can, be made positive at that time. If, however, no cause can be found for the irregular bleeding at the time of the curettage, and the microscopic examination of the scrapings is negative and the symptoms return in two or three months or later, this process should be repeated. It should be repeated just as soon as the bleeding returns, until a diagnosis can be made or the patient cured.

A. W. Johnstone, M. D.:

There is one thing which I wish to speak of in connection with *adeno-carcinoma*. An adenoma of the uterus is simply first an increase in the number of glands, next an increase in the size of the glands, next a proliferation of the cells of the glands, and lastly a giving way of the basement membrane of the gland itself. The thing becomes carcinomatous the minute the basement membrane gives way. It has gotten to such a point that when I find three or four layers of cells piled up one upon another in these glands I know that the next step is to tell a patient that she will have cancer, and the safest thing for her is to operate when you find this condition present. If this condition should be present in the ordinary stroma of a gland, such as you find in a polypus, this is not necessarily true, though a number of cases have originated in polypi and not in fibroids. So I have gotten to the point when I find an adenoma of the fundus as a cause of bleeding in a woman past the menopause I feel that this is a case to be watched most cautiously. I know of but one case in seven years in which I advised operation, and who did not have it, who is still living and comparatively comfortable. When your microscope tells you that you have an adenoma present I believe that to be the penumbra of cancer, and sooner or later it will be cancer. I had a case once, however, in which I was sure the patient had adeno-carcinoma. Scrapings had been made in Europe several times and a report of senile endometritis made. When I got hold of the case she was in no condition for any kind of a capital operation. I thought possibly I might get her into condition to do a curettement, but when I stopped her drinking champagne and all sorts of things I got rid of the bleeding and she is well to-day. I had another case which bled most furiously. Upon examining her with the speculum I found a most terrific tear of the cervix, I repaired this and the woman got well, but after a few months the terrible bleeding came on again and she looked as white as a sheet. She complained of being extremely bilious. I gave attention to the liver, and in two months the bleeding had entirely stopped, and for the last two years she has been menstruating perfectly normal. I am sure the damming back of the blood through its improper circulation in the liver is responsible for many of these cases. We cannot make a snap diagnosis always in cases where the

symptoms cause us to be suspicious of uterine trouble, for it may turn out to be the liver which is at fault.

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Edwin Ricketts, M. D. :

In regard to *early diagnosis of cancer of the uterus*, I want to cite a case where a vaginal hysterectomy was performed on a lady, fifty years of age, in which bleeding had occurred occasionally. There was no examination made of the scrapings of the uterus. It was removed because it bled. In these cases of bleeding in women from forty-five to fifty years of age the uterus is better out, and the patient will be in better shape for any trouble that may arise from malignancy later on.

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James R. Purdy, M. D. :

There is no nobler work in our profession than the saving of mothers and children; the preservation of life is the justification of our existence. The great drawback to *the practice of midwifery* in the minds of many men is to me one of its greatest charms. You must be self-reliant; you cannot, in many cases, wait even a few minutes for additional help, and in many cases no colleague could be got under hours of waiting, and so a man, single-handed, mayhap with an incompetent nurse, has to tackle work, upon which depend the present safety and after well-being, not only of the mother but also of the child.

The great trend of modern midwifery is the acceptance of the principle of early interference, as opposed to the non-interfering principles that were taught up to the last few years, and which are still, though in a modified degree, taught in some of the schools, and still laid down in most of the text-books. The cry, "meddlesome midwifery," is still heard in the land. In most men who practice midwifery, their method has come to them by a process of evolution, unless, of course, as, alas! many do, they still follow what they were taught at the schools. We now recognize conditions rarely formerly forced on the notice of the most ignorant, simply by effluxion of time.

Chloroform I use in practically all labors. It is to chloroform, in my opinion, we owe all our great advances in obstetrics. We can now make, under chloroform, a careful diagnosis that formerly was absolutely impossible; and it is in an early and proper diagnosis that the whole structure of treat-

ment is built up, and on the success or non-success of that treatment depends the future of the mother and child.

Personally, I have not in my own practice bandaged a patient during the last twenty years. The vagina should be syringed two or three times a day with warm milk and water. If the discharge smells at all, solution of chloride of lime should be used. I have never douched a woman after labor as a routine, and I have never allowed any nurse of mine to do it. I have argued most strongly against this practice for years, and now I am glad to see that douching after labor is universally condemned. Some men, however, still practice it. Dr. O'Sullivan, in summing up the debate on my paper on "Eight Years' Midwifery Practice," in 1899, stated that he quite agreed with me that douching after labor was unnecessary and dangerous; and he added that he considered it criminal also.

The best treatment of post-partum hemorrhage is prevention. It should practically never be allowed to occur, and if you study modern methods and statistics you will find that post-partum hemorrhage has almost entirely disappeared in some men's practice. All the text-books in olden times have chapters about vesico-vaginal and other fistulæ, all of course caused by delay. I have never seen a case of fistula in my practice.

In my practice, extending over twenty years, I have practically had no maternal deaths. The only two deaths in my practice were one of the seventh month, moribund from eclampsia when first seen (she died within an hour), and one in a woman of forty who had had two children, an interval of twenty years between them. She was doing well, and the labor was not out of the ordinary. She died quite suddenly on the fourth day after delivery, probably from embolism.

I have not as yet had a case of puerperal fever. I have only seen one case of mastitis during the last fifteen years. I have also had no case of phlegmasia dolens for over fifteen years. As a matter of fact sepsis is unknown in my work.

I use forceps in about sixty per cent. of my cases. I am never quite easy in my mind unless I extract the placenta manually. I certainly do it now in fifty per cent. of my cases. I learned this method from a brother practitioner. When I first came here he used to say he was never satisfied unless he passed his hand into the uterus and extracted the placenta as a routine. Up to then I had only done it when forced upon me,

and for a long time I viewed his method with suspicion; but as years rolled on and I saw how well his patients did I gradually followed his counsel and now am never quite satisfied unless I have explored the uterus manually after labor. I have so far seen no bad results but have records of many cases where the procedure was of enormous preventive benefit. I have hardly ever a case of post-partum hemorrhage. The only ones I see are when the patients have delayed in sending for me, and labor is over or nearly over when I arrive.

I am aware of the necessity of abdominal palpation and of the ease with which the position can be made out, but I hold external palpation will never supersede internal examination, and that the great trend of modern midwifery is to look upon parturition as a natural process, to make a thorough diagnosis, and as soon as ever Nature departs from the normal, then to step in and try by the art of the obstetrician to stop any delay from becoming a source of danger either to mother or child, or both.



W. O. Henry, M. D.:

Regarding the various operations for *retro-displacements*, I would recommend a new operation, and one that I have done with great satisfaction. The operation is this: The abdomen is opened in the usual way, the uterus brought up to its normal position, freed from any adhesions, and whatever work is necessary is done upon the adnexa, and the anterior uterine wall just above its union with the bladder is slightly scarified, and the bladder united to the anterior uterine wall to the extent of about one-quarter of an inch, and the vesico-uterine ligaments are also sewed to the anterior uterine wall for the extent of half an inch or even more, if necessary. These sutures are all absorbable catgut. I find this gives the least trouble and the most perfect support to the uterus of any operation I have seen. One other thing: Whenever these operations are done, it is a good plan to have the patients lie on their side, and as soon as possible on their face a good deal of the time, as this tends to throw the uterus forward; and this too is, I think, an important point in all women after confinement, especially if they have previously had retro-displacements. Doing away with the binder and getting the patient up to attend to the calls of nature

during normal involution of the uterus will correct many cases that otherwise would go back into a retro-flexion.

Book Reviews.

OBSTETRICS FOR NURSES. By JOSEPH B. DE LEE, M. D., Professor of Obstetrics in the Northwestern University Medical School, Chicago ; Lecturer in the Nurses' Training Schools of Mercy, Wesley, Provident, Cook County, and Chicago Lying-in Hospitals. 12mo of 460 pages, fully illustrated. Philadelphia, New York, London : W. B. Saunders & Company, 1904.

Although this work was written, as the author states, primarily for nurses, yet from our examination of it we firmly believe that the medical student will find in it much of value, since the duties of a nurse often devolve upon him in the early years of his obstetric practice. There are really two subjects considered—obstetrics for nurses and the actual obstetric nursing—and Dr. De Lee has combined them so that the relations of one to the other are natural and mutually helpful, presenting this important branch of medicine in a clear and interesting form. The illustrations have not been borrowed from other works, as is too frequently the case, but have been made expressly for this book. The photographs were taken by the author from actual scenes, and are true to life in every respect. The text is the outgrowth of eight years' experience in lecturing to the nurses of five different training schools.

We have just received from W. B. Saunders & Company, of Philadelphia, the medical publishers, an unusually attractive illustrated catalogue of their complete list of publications. It seems to us, in glancing through this catalogue, that a list of the Saunders authors is a census of the leading American and foreign authorities in every branch and speciality of medical science. And new books are being added and new editions issued with a rapidity that speaks well for the success and progressiveness of the house. While comparisons are always odious, still we feel it but justice to say that, in the presentation of facts about the books listed that a probable buyer wishes to know, and also for beauty and durability of mechanical get-up, this catalogue surpasses anything we have heretofore seen.

It is truly representative of the house. We understand a copy will be sent free upon request.

Translations.

Treatment of Abortion in General Practice.—F. Moebius (Therap. Monat.), deals with the treatment of abortion in general practice, leaving the theoretical discussion of the mechanism, etc., untouched. While he holds that the most rational and physiological method of treatment is the expectant treatment, he considers that this is only safe for the patient if she is in hospital, and that such an expectant treatment as one must carry out must be fraught with danger if the patient is not continuously watched by trained medical practitioners. The bleeding may come on quite suddenly and profusely, and before the doctor can be with his patient it may be too late.

The question to decide is how best to empty the uterus completely and rapidly. This must be done with the least danger and with the greatest possible protection to the patient. All instrumental methods are to be avoided. This applies equally to the curette, the abortion forceps, and all other instruments. He then proceeds to describe the method which he believes to be the safest to follow. When the os and the cervix are patulous to the finger, he immediately clears out the uterus digitally. When two or more fingers can be passed into the organ, the procedure is easy. If only one finger can be passed, the operation may be found extremely difficult, and then it is better to plug, and two or three days later the whole ovum may be found just behind the plugging. As a rule, however, the difficulty does not lie so much in the detaching of the placenta as in the emptying of the detached portions from the uterus. This can be secured by washing the cavity well out by a powerful irrigation, care being taken to avoid bringing air into the uterus. The finger should not be removed from the uterus until everything has been detached from the wall of the organ. If this is impossible, much care must be taken to disinfect the finger again before reinserting it. As soon as the uterus has been emptied the organ contracts powerfully. This may be taken as a guide as to when all has been removed. If the water returns clear on irrigating one may be sure that the organ is empty. When the os is scarcely or not at all dilated, one should plug the cervical canal, and, if possible, the uterine cavity. Vaginal plugging has disadvantages. It may induce pains, and the bleeding may soak through the packing. The only disadvantage of packing the uterus is the risk of sepsis,

and this must be overcome by employing well-prepared iodoform gauze and care in the plugging.

The necessary instruments are: Two vulsella, a medium-sized Sims speculum, an irrigation tube, a long pair of plugging forceps, and a catheter. The gauze should be kept in a special box, which can be held between the knees while one is plugging. For the cavity he uses gauze of a little over 1 inch in breadth, while for the cervix the breadth is about 2 inches. The plugging may be left for forty-eight hours, and the temperature carefully watched. In conclusion, he speaks of the uses of dilators, which he does not recommend as a routine treatment.

Hypertrophied Cervix Complicating Labor.—Theodor Haagn (*Zentralbl. f. Gynäk*) describes a case in which a hypertrophied cervix interfered with delivery. The patient was a woman 34 years of age, a primipara; menstruation had become established at the age of 13, and had been regular every month until the occurrence of pregnancy. In the year after menstruation began the patient had first noticed the prolapse which became evident after any prolonged exertion; but disappeared on sitting or lying down. Before her marriage the exposed part, according to her account, was about half a finger's length! At the end of the third month of pregnancy it no longer went back spontaneously, but could still be replaced. The woman was examined during the tenth month of pregnancy, when a bluish-red swelling 9 to 10 cm. in length, and 5 cm. in thickness projected from the vulva and proved to be a hypertrophied cervix. Both anterior and posterior vaginal walls were inverted and there was a cystocele. The duration of labor was from 8 o'clock on one night to a quarter to 10 o'clock on the next night; the pains were strong throughout. At 8 o'clock in the morning the general condition was good, the pulse 96, temperature 38.5° C. At 4 o'clock in the afternoon, the external os admitted two fingers, the cervix was still 2 to 3 cm. in length, and the small fontanelle could be left to the right and in front; the pains were felt every five minutes. At half-past 8 o'clock at night vomiting set in, the temperature was 39° C., pulse 105. At 9 o'clock a further examination was made. The internal os was dilated, the external os was the size of a 5-kroner piece, and was thick and unyielding. The patient was now anesthetized and the cervix split with scissors in the middle line in front to a distance of 2 to 3 cm. from the external os. The scissors were guided by the finger in order to avoid injury to the bladder. Delivery was then easily accomplished with forceps, and the placenta came away spontaneously after half an hour. The cervical wound was reunited by means of three stitches and the uterus douched with a 2 per cent. solution of lysol. An

hour after delivery the temperature fell to 37° C. The puerperium was normal. The striking point about the history in this case was the early onset of the prolapse, and there can be no doubt that the hypertrophy of the cervix was the primary lesion, to which the inversion of the vaginal wall was secondary. The chief danger to the mother lay in her increased liability to infection, and to minimize this risk the prolapse was replaced at the beginning of labor. The rise of temperature to 39° C. was an indication for speedy delivery.

Changes in the Uterine Mucous Membrane during Ectopic Pregnancy.—Riche (*L'Echo Méd. du Nord*) shows from the literature that during ectopic gestation the uterine mucosa undergoes changes very similar to those occurring in normal intrauterine pregnancy, becoming thickened and divisible into layers, two or three, according to the fancy of the observer; these changes are more marked the nearer the ectopic ovum is to the uterine end of the tube and the more advanced the pregnancy. Following this brief summary he gives an account of two cases recently investigated by himself. In the first a tubal pregnancy which had advanced to about the fifth week, the uterine mucosa was thickened, and microscopically differed from normal mucosa in its more irregular texture and in possessing fewer glands. It consisted of two layers, a superficial compact one and a deeper loose one, and was freely vascularized; in places there was a third still deeper layer of almost normal mucous membrane with dilated glands. In the second case there were no data as to the stage of the ectopic gestation; the changes in the mucous membrane of the uterus were not decidual, but rather those of a chronic interstitial inflammation. Riche tells of other similar cases; he thinks the endometritis preceded impregnation and prevented the usual decidual formation. The importance of the first case lies in the fact that observations of the uterine changes in early stages of ectopic pregnancy are scanty; it shows that at quite a short time after conception the uterine mucosa is thickened and differentiated into a thin, compact surface layer and a deeper, loose, edematous layer, while capillaries develop to an extent sufficient to vascularize the hyperplastic tissue. The clinical value of such observations as these consists of the help they afford in identifying the membrane discharged in cases of extrauterine gestation as distinguished from those of abortion and those of membranous dysmenorrhea.

Intermenstrual Pain or "Mittelschmerz."—Rosner, of Cracow (*La Gynéc.*), has studied some cases under his own care and collected the literature of the subject referring to all the monographs on this disorder except to that prepared by Malcolm Storer. Rosner denies that there are no objective symptoms associated with intermenstrual pain, and on the other hand

maintains that the pain is not a mere symptom of chronic inflammation of the appendages, pelvic peritoneum, or parametrium. Twelve patients were under his care, and in only one could he fail to find any disease of the genital tract, whilst in ten the uterus was distinctly enlarged. Yet, on analyzing the ten (rejecting two cases of apparently normal or only slightly enlarged uterus, lest some morbid condition might have been overlooked), in not one was there any history of abortion, puerperal mischief, or gonorrhea; no new growths of the ovary existed in any case.

On the strength of the positive evidence of enlarged uterus, and the negative evidence as to the inflammatory complications so striking in these ten cases, Rosner feels bound to support Richelot, who ascribes intermenstrual pain to a diffuse hyperemiä and hypertrophy of the uterus of non-inflammatory nature. He notes that Halliday Croom and Addinsell have described cases of this disorder associated with uterine fibroids, an essentially non-inflammatory condition. Rosner rejects the Addinsell-Giles theory that intermenstrual pain is set up by contractions of the Fallopian tube, but believes that varicosity of the pelvic veins is a factor in causing the pain. Such was at least the case in one of his own patients, but she was a multipara, aged 34, and he adds that she was the subject of varicose veins in the lower extremities. Lastly, Rosner denies the theory that the pain is due to abnormal intermenstrual circulation. There is no evidence that such a condition exists in this complaint, nor any reason to believe that an extra or abnormal circulation is of necessity painful.

The treatment of intermenstrual pain is unsatisfactory. Drugs are not of uniform benefit, the curette and the dilator are not clearly indicated, whilst hysterectomy and removal of the ovaries are hardly justifiable. Rosner claims the best results from systematic firm packing of the vagina, the "columnization" of Auvard practiced when the intermenstrual pains have commenced; or, better still, when they are due. He admits that this method is empirical, whether it supports veins or has some influence on nerves being uncertain. He intends to try elevation of the pelvis after Pincus's method in future cases.

Arrested Development of Internal Organs.—Batzewitsch (Monats. f. Geb. u. Gynäk.) demonstrated before a Russian medical society a case of completely successful operative treatment of this condition. Atresia vaginæ was complete, and it was important to bear in mind that no uterus nor appendages could be detected on palpation through the rectum. The vulva was very carefully inspected, and then a minute semitransparent spot was discovered between the labia minora. It represented the introitus, and proved dilatable. At length a Hegar dilator could be introduced, and after a time the largest size

was used. The vagina after dilatation measured 3 1-2 in., the uterus could be plainly defined through it, and proved to be well-developed, and at length menstruation set in. There was some discussion about the cause of arrested development in this case. Batzewitsch considered that it was a congenital condition, but von Ott was of opinion that, as in the majority of cases of atresia, the closure of the vagina was really due to gonorrheal infection in infancy. Menstruation was the best indication for operation, and the menstrual blood in a hematocolpos was a guide to the opening and direction of the genital canal; but in this instance there was only a little mucus in the contracted vagina. Yet the mucus caused the semitransparency which indicated the introitus and led to the successful treatment of the case. The vaginal walls were suspiciously thick; in congenital malformation they are thin and ill-developed.

Gold Sutures in the Radical Treatment of Hernia.—A. Vecchi (Il Morgagni) discusses the different materials from which sutures can be made, with especial reference to gold wire and to hernia. He describes his own experiments on the anti-septic properties of gold, and the methods employed and the results obtained by Tansini in the radical treatment of hernia. Recent statistics show that modern methods of operation still leave 4 or 5 per cent. of cases of suppuration after hernia operations. Most of these, whether the suppuration is immediate or late, are cases of stitch abscess, and the question naturally arises whether the best material for sutures has yet come into use. Catgut is difficult to sterilize, especially as it is so weak that it is necessary to use strands of considerable thickness. A thick suture, moreover, lacerates the tissues, and may cause abscess, though itself sterile. The author also states that it is impossible to foretell how soon catgut will be absorbed and how soon firm union will be obtained. Silk is a better material, and can be readily sterilized, but it sometimes leads to necrosis of tissue and subsequent suppuration after everything seems healed. Removable sutures allow access from outside to the depths of the wound, and may cause widespread deep suppuration. The so-called autoplasmic suture composed of fibers from the tendon of the external oblique muscle, or from the parietal peritoneum, supplies an aseptic material which is already organized and has given good results in the hands of its inventor. Of metallic sutures, silver alone has hitherto been much used. For use in cases of hernia silver wire must be thick, and it is therefore in danger of injuring the tissues. Mixed silver and catgut sutures have been employed, and unite the inconveniences inseparable from the use of these substances.

The modern use of gold sutures in the treatment of hernia Vecchi ascribes to Tansini. Other methods of operation have,

however, been in more or less continuous use since the thirteenth century, employing gold wire in less scientific ways. The earliest operation of this sort consisted in surrounding the neck of the sac with a gold wire which included the vas deferens and the spermatic vessels, and then tightening the constriction. Too much pressure caused castration, and too little involved failure of the operation. The author also describes other operations now superseded. The advantages of gold wire depend to a great extent on the fact that it can be drawn out very fine while retaining great flexibility and sufficient strength. Gold resists all chemical agents, being proof against the common acids and alkalies. It can be heated to 1000° without undergoing alteration, and lends itself readily both to mechanical and chemical disinfection. It is a substratum unsuitable for the life of micro-organisms, inhibits their development, and possesses a bactericidal power.

Crédé's silver treatment of wounds was founded upon a bactericidal power which gold has in common with silver, though not so strongly. This is shown by Miller's work in connection with the mouth, by Vincent's experiments detailed in his paper "On the Microbes Existing on the Surface of Pieces of Money," and by the author's own experiments.

Vecchi immersed numerous fragments of gold wire in sterile broth at a temperature of 37°, and treated the broth at intervals of twelve hours with cultivations of various micro-organisms—for example, staphylococcus aureus, bacillus pyocyaneus, and diphtheria bacillus. At first these cultures grew rapidly, but after a few days fresh implantations did not grow. Control experiments showed that this inhibitory action was stronger in the case of silver or copper wire than with gold. Further experiments with pieces of wire embedded in agar plates showed that colonies grew in the agar almost up to the wire, but left a very narrow sterile zone. The inhibition must therefore be exercised by some chemical product dissolved in and diffused through the broth, but incapable of diffusion through the agar plate. Another series of experiments consisted in inoculating one ear of a rabbit with staphylococci from a case of phlegmonous suppuration of the forearm, by means of a loop of silk, and inoculating the other ear with the same pus by means of a loop of gold wire, the loop in each case being left in the wound. In both the rabbits thus treated the ear with the silk loop quickly suppurred, but the gold wire was encysted after slight and transient inflammation. A minute calculation of the amount and cost of the gold used in hernia operations is made to show that it is cheaper to use gold wire than catgut.

Tansini uses wire of diameter 0.3 mm. for deep sutures and for tying the neck of the sac, 0.2 mm. for superficial sutures and for suturing the sac itself. He attaches great importance to keeping the hands of his assistants away from the wound.

and with this object he has invented a special set of hernia instruments. This includes a self-acting heavy hook for the spermatic cord, two retractors with heavy curved handles for the margins of the wound, and a long-handled spatula to depress the bottom of the wound and to protect the tissues from the needle after it has transfixed the muscular stratum. Before adopting gold wire and the other instruments just mentioned Tansini used to have about 5 per cent. of hernia cases followed by suppuration. Since then he has had a continuous series of 300 cases, including only one case of suppuration—a slight case in private practice under circumstances which sufficiently explain the course it took. The author adds a few similar but smaller figures from the practice of other surgeons.

Peritoneal Infection in Early Stage of Cancer of Cervix.—Violet and Adler (*Ann. de Gyn. et d'Obst.*) report an instance of cancer of the cervix where the local disease was but little advanced and the uterus movable, so that the case was held as "clinically operable." Abdominal section was performed and then it was discovered that removal of the uterus would be useless. The patient was 43, whose parents both lived to be aged, nor had any other relative been subject to cancer; she herself had enjoyed good health all her life. She had borne four children, the last confinement occurred nine years before her illness, which began with intermenstrual hemorrhages and fetid leucorrhea. Defecation and coitus caused hemorrhage. There were dull pains in the loins and hips. Cachexia was entirely absent. The patient was examined nine months after the symptoms first appeared. There was a typical friable cancerous ulcer on the cervix, the uterus was movable and its body of normal measurement, the fornices were free. The cervix was curetted and cauterized, then the abdominal cavity was opened. A metastatic deposit superficially as broad as the palm of a man's hand was found in the subserous connective tissue of the lower part of the parietal peritoneum extending to the bladder, and on the peritoneum itself, a little to the left of the middle line, were two isolated masses each as big as a small cherry. All these deposits were found on microscopic examination to be cancerous. Removal of the uterus was out of the question. The patient recovered from the operation.

Rectal Cancer Overlooked in Pregnancy and Labor.—S Emmelink (*Centralbl. f. Gynäk.*) shows in an instructive report how easily a grave complication may be overlooked in pregnancy should the patient decline examination. He was consulted by a woman, aged forty-two, in the seventh month, who desired him to attend her in her confinement. As she had borne twelve children already, and all her labors had been spontaneous except one, she declined examination as unneces-

sary. This decision was considered unwise by Semmelink, as the patient's legs were edematous, and had been so before the pregnancy. He was furnished with a sample of the urine, and found it free from albumen. His advice to the patient to place herself under her family doctor for the edema was not followed. At term labor pains set in, and as they grew weak Semmelink delivered the child with forceps. It was a healthy male, over 11 pounds in weight, and was reared. The placenta followed about an hour later. Four days after the confinement the patient was put in the hands of De Mouchy. In a few days the patient complained for the first time of pain during defecation, bloody stools were passed. Then the rectum was explored, and malignant disease detected high up the bowel. There was stricture, and an accumulation of feces above it; it is significant that this complication had neither caused inconvenience nor interfered with the labor. The cancer was quite inoperable, and the patient refused to have colotomy performed. She died within six months.

Damage to Ureter in Hysterectomy. etc.—Wertheim (Centralbl. f. Gynäk.) exhibited an intraligamentary myoma at a society in Vienna, eight weeks after its successful removal. During enucleation the ureter, which ran in the capsule, was cut through in spite of every precaution. Transplantation into the bladder was not feasible owing to the distance of the cut portion from that organ. Wertheim did not adopt Howard Kelly's method of stitching the upper end into a longitudinal slit just below the cut surface in the lower end, but simply invaginated the upper end direct into the lower, and fastened it there with two sutures. As the ureter was much stretched by the intraligamentous growth this union was not difficult to effect, and did not cause tension of the duct after application of the sutures. Wertheim cannot guarantee a sutured ureter against stricture. He referred to Mackenrodt's case (Monats. f. Geb. u. Gyn., April, 1902, Epitome, June 14, 1902, par. 377), similar in clinical history, where this complication occurred with hydronephrosis and development of calculus in the ureter as results. Eight weeks after the operation the urine in Wertheim's case spurted from the vesical orifice as freely and powerfully as on the sound side.

Precocious Menopause.—Siredev (Soc. d'Obst. de Gyn. et de Péd. de Paris) relates 5 cases of this condition. Case 1. Patient 35, rather stout and gouty. Period began at 17; patient married at 22, never pregnant; no genito-urinary disease. Catamenia regular till 32, then menopause symptoms complete at 33. Cervix atrophied. Case 2. Patient 36; period began at 14, always regular thenceforth until nine months before observation, then they ceased completely, with mild

general symptoms. The cervix was atrophied; the patient had borne a child at 25. Case 3. Patient aged 26. Period began in her 17th year; at 18 she had typhoid fever severely; the period ceased never to return. Her health remained good; at 22 she married, but never became pregnant. Three years after marriage she contracted syphilis and separated from her husband. When under observation she had been successfully treated for hematemesis. The cervix was effaced. She occasionally felt flushings in the cheeks, but her health was otherwise good. Case 4. Patient 32. She had been diabetic for a year at least, probably longer; but the period had ceased entirely for six years. It appeared at 15; the patient married when 23, and was never pregnant. At 26 the catamenia ceased suddenly; mild general symptoms persisted for a few months. Emaciation and weakness followed; ultimately sugar was detected in the urine. There were large pigmentary patches on the cheeks, back and hands. The patient died of diabetic coma when under observation. Case 5. This case seems to be a true instance of superinvolution. Patient 22. The period appeared at 18; she married at 20, a few days before a period, and at once conceived. Delivered at term she suckled her child for two months, and then became a wet nurse, suckling for fourteen months another child which was reared and became strong. The catamenia never reappeared, menopause symptoms were observed. The cervix was small, and the uterine body also below the normal size observed in parous women. About a year later the process of atrophy had advanced. In none of these cases was the abnormal menopause so severe as that which is often seen when both ovaries are removed by operation. Siredey is not certain that the menopause in Case 3 was due to the attack of typhoid fever; that disease is very common, yet it seldom affects the catamenia permanently. He doubts whether the fourth patient was diabetic when the precocious menopause was established six years before death. The diabetes which proved fatal was of a very rapid type. Lastly, Siredey dwells on the fact that the catamenia began relatively late in life in all these cases.

Cancer Formed in a Cicatrix.—Martinelli (Giorn. dell' Assoc. Napol. di Med. e Nat.) relates the case of a patient, aged forty-five, whose right leg and thigh were severely lacerated twenty years ago. The wounds after several months finally healed, leaving scars. Last September a heavy beam fell on the leg, causing a large wound with considerable hemorrhage, in the site of the old scar. The wound did not heal in spite of three cauterizations, so the case was brought into hospital. There was some rise of temperature and night sweating. The right thigh showed a scar 17 cm. long, and on the anterior and external surface of the lower third of the

leg was a large square-shaped ulcer measuring some 18 by 15 cm. The upper half of the ulcer was concave, the lower markedly convex and readily bleeding, with exuberant granulations. The margins, especially the lower, were infiltrated with numerous nodules. The inguinal glands were enlarged. Malignant disease was diagnosed, and the leg amputated at the knee, and the glands excised. The patient was seen twenty months later and was in excellent health, with no sign of relapse. Microscopic sections proved the presence of a true epithelioma. There was no family history of cancer. In relation to this case, the author has looked up the literature of the subject, and collected a considerable number of references, showing the frequency with which cancer develops in cicatrices or ulcers, whether these exist in the skin or the mucous membranes. How far the development of cancer in cicatrices or wounds can be explained on the current theories about the genesis of cancer it is difficult to say. The *vera causa* of cancer yet remains to be discovered. A cicatrix or a wound, being a *locus minoris resistentæ*, is so far a predisposing condition. Or on Cohnheim's theory, traumatism may be looked upon as a cause rousing into activity aberrant germs hitherto latent in the tissues; and the discontinuity of surface in ulcers offers a favorable condition for the development of microbes. As things are at present, one may choose whichever theory or part of a theory seems to fit the individual case the best. Meantime the author's case and statistical study serve to direct attention to one possible exciting cause which in these days of germs may get overlooked.

Melanotic Dermoid Sarcoma of Ovary.—Amann (Monats. f. Geb. u. Gyn.) reports a case where the patient was fifty-nine years old, and her hair was remarkable for its intensely dark color. She had been four times pregnant. The tumor had been noticed for six months and grew rapidly, whilst emaciation was marked. At the operation no adhesions and no extension of the disease beyond the limits of the tumor were detected. The growth, as big as a man's head, was of the cannon-ball or racemose type, and bluish-black in color; it had developed around a true ovarian dermoid, which contained grease and a few tufts of hair. The tumor itself showed a dark soft surface on section, which became somewhat convex; it was found to be a true melanotic sarcoma, and Amann considered it to be unique. Many so-called "melanotic" tumors of the ovary described by pathologists of a past age were malignant growths stained by hemorrhages into their substance.

Venous Dilatations in the Gravid Uterus and Their Clinical Importance.—Halban (Monat. f. Geburts. und Gynäk.)

reports the following case. The patient, aged twenty-six years, was in her first pregnancy; she menstruated last May 3, 1903. At the beginning of June a slightly blood-stained discharge appeared. It lasted for eight days and afterward became purulent. During this time the patient had pains in the back and breasts, and a slight rise of temperature. Severe hemorrhages developed later and she was admitted to the hospital July 26. Upon examination she appeared to be pregnant about three months. With rest in bed the bleeding soon ceased and she was allowed to leave the hospital. She was readmitted later with severe hemorrhages, when it was decided to empty the uterus. The cervix was dilated under ether anesthesia with Hegar's dilator and the embryo and membranes were removed with ovum forceps. It was discovered that in the operation a small piece of the uterine wall was brought away in the bite of the forceps; a careful examination revealed a perforation of the uterus about three fingers' breadth above the internal os. The uterus was accordingly removed per vaginam and three serious lesions were found, two in the cervix and the one above mentioned. Recovery was uneventful. On cutting open the uterus along the anterior wall the musculature presented the appearance of a sponge on account of the great dilatation of thin-walled vessels varying in size from a pin's head to that of a pea, with the muscle wall between them as thin as paper. These vessels were evidently veins and capillaries greatly dilated, whose walls almost touched one another on account of the great thinning out of the muscle substance between. The outer and inner groups of vessels seemed to be most affected. Kaufmann's cases occurred, one in a thirty-year-old primipara, and the other in a widow of forty-one, non-pregnant.

Three explanations seem to offer themselves in these cases: One, that it is a nevoid formation in a non-pregnant uterus, in the same way that angioma occurs in the liver. Secondly, venous dilatations of the non-pregnant uterus from back pressure. This was apparently the explanation in the second case reported by Kaufmann. Thirdly, varicosities in the pregnant uterus from hypertrophy of the veins, as in Kaufmann's first case and in the present case.

The author believes that a specific change in the vessels due to pregnancy is the cause of this curious condition, and that varicosities result from thinning of the vessel walls instead of hypertrophy. The varicose veins of the vulva, legs, and abdomen so often seen in pregnancy may be caused in this way, too, for they cannot be explained on the pressure hypothesis. The dangers in the case are the great liability to hemorrhage and also the liability to laceration if any operative procedure has to be undertaken. Both of these possibilities were exemplified in the present case.

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INDICATIONS FOR THE SURGICAL TREATMENT OF FIBROID TUMORS OF THE UTERUS.*

BY B. FRANK BETTS, M. D.

The estimate of Klobb that nearly fifty per cent. of women who have reached the age of fifty show evidences of the presence of fibroid tumors of the uterus, if subjected to post-mortem examinations, is generally conceded to be too high.

From the records of the last 1000 patients examined in private practice I found 134 suffered from the presence of these growths to an extent sufficient to require treatment.

In my hospital service a greater proportion are operated, as they come to the institutions for that specific purpose. Many small growths produce no symptoms and are entirely unrecognized by the general practitioner. My records are compiled from cases sent for diagnosis and treatment in consultation and belong strictly to the class known as gynecological.

Whilst many growths of this character produce but few palpable evidences of their presence, they often become complicating factors later in the history of the case and require consideration on that account. When the tumors are so small, however, as to produce no symptoms, patients are not informed of

* Read at a meeting of the Homeopathic Medical Society of Pennsylvania.

their presence, because of the mental effect that might be produced, but some judicious friend is informed with the object of securing such supervision of the case as may be necessary for the patient's welfare in the future.

Of the 134 cases referred to, 81 needed prompt attention by surgical treatment and 49 were less urgent. Pregnancy was a complication in 4 additional instances and 2 of these required prompt surgical intervention for the relief of excessive pain, hemorrhages or dangerous symptoms due to mechanical causes. Two others were allowed to go to full term because of a more favorable location of the growth near the fundus and in both instances the tumors disappeared after parturition, during the nursing period.

There were undoubtedly in the 1000 cases many patients examined who had tumors too small to be taken into account or so located as to be overlooked. The statement of that eminent American authority (Dr. Howard Kelly) that a *great majority* of myomatous uteri require no treatment has, however, not been corroborated by my experience.

The symptoms which have most frequently required treatment are pain, peritoneal irritation, and inflammation from the development of the subserous variety—hemorrhage and conditions complicating gestation from the submucous variety and both of these sequences from the interstitial form.

Hemorrhage has been kept in subjection in many instances by sabina 3x, ipecac 30, belladonna 30, china 3x, trillium pendulum 3x, and nux vomica 30, in the order mentioned. Hot vinegar and water compresses have been frequently used when the flow became excessive. They are applied to the uterine region externally, above the symphysis. Vaginal or utero-vaginal tampons have sometimes been employed. Pain and symptoms of inflammation have been satisfactorily controlled by bryonia 30, or belladonna 30, with the unloading of the bowels and recumbency.

But hemorrhage, if persistent, leads to the most serious consequences, involving the heart, kidneys, or liver in many instances.

The approved methods of electrical treatment for controlling hemorrhage were formerly used but have long been discontinued.

Curetteage has been resorted to with apparent temporary re-

lief of hemorrhage in many cases, but is recognized as a surgical measure fraught with considerable danger in many instances.

The danger is increased in those in whom a submucous bleeding fibroid renders the uterine canal so tortuous as to prevent complete curettement of all the mucous surfaces covering the protruding mass. To thoroughly curette a portion of the endometrium when septic matter is lodged in inaccessible spaces higher up, exposes a raw surface to serious septic influences. Sloughing, partial disintegration, and inflammation are conditions to be guarded against.

Whilst in a general way the bleeding is in proportion to the proximity of the tumor to the endometrium, pressure-atrophy may exist in some cases in which the bleeding is profuse and for this condition curettage will be of little benefit, because one or more large vessels are bleeding rather than the whole mucous surface. A small tumor may bleed more copiously than a large one and be entirely unaffected by curettement. When the cervix is encroached upon by the tumor so that it is not freely dilatable, curettage is contraindicated, for the curettement of a myomatous uterus should be preceded by a thorough dilation of the cervix, then a prolonged effort to sterilize the cavity by irrigation, then the exploring sound or small curette should be introduced, so as to determine the length and the conformation of the canal. When the canal is so distorted that neither the sound nor curette can be passed into all parts of the cavity, curettage had best be dispensed with. Thorough irrigation with the bi-chloride solution is an efficient substitute.

The removal of a single growth lodged low in the cervix by morcellation or the removal of multiple growths by hysterectomy is the best procedure, in my experience.

A patient suffering from metrorrhagia while still a young woman was curetted for the first time twenty years ago, when medicine failed to accomplish the desired results. For a time the menses became regular and she afterward married. Although well developed in every way and a picture of perfect womanhood, subsequent curettements became necessary, and at shorter intervals, and she remained sterile. After an absence of several years she consulted me again, last January, on account of a most offensive and frequently recurring menstua-

tion, which amounted to metrorrhagia without periodicity. Pregnancy and the retention of the products of an interrupted gestation could be excluded. The resort to curettement was believed to be more dangerous—from an increase of the general septic condition—than abdominal hysterectomy, yet as the patient at first refused the latter treatment, uterine irrigation with the bi-chloride solution was attempted through a patulous cervix. This resulted in the immediate onset of a perfect flood of blood which had a marked effect upon the pulse and general appearance of the patient as to convince me of the futility of all such efforts. Tamponment, recumbency, and treatment intended to increase the hemoglobin and red-blood-cell count, as well to improve the heart's action by saline infusion and good nursing for one week, secured all that was possible before an abdominal section. As the patient was not in a condition to be brought to the hospital from her suburban home I was obliged to operate with the following unfavorable conditions confronting her. Increasing septic infection with elevation of temperature, nephritis with albumen in the urine, degenerated heart muscle, impaired digestion, assimilation, and consequent hydremia. With all the precautions observed during the operation we had subsequently, considerable heart failure, with renal insufficiency, defective assimilation, hyperemesis, and finally pleuritic effusions in both thoracic cavities which impaired respiration and interfered with sleep but slowly yielded to the administration of bryonia, until complete restoration to health was effected.

The microscopic examination of the sloughing submucous tumor showed evidences of malignant degeneration. Professor Kelly's statement that no surgical treatment should be attempted when such complications exist—as advanced nephritis, double hydronephrosis, or persistent glycosuria—is fully endorsed, but my contention is for an earlier operation, which precedes these conditions. In such cases as can be relieved of these complications by recumbency, elevation of the mass in the knee-chest position and packing the vagina with woolen tampons, the surgical treatment may be *deferred*, but a frequent recurrence of impaction with pressure symptoms will call for prompt operative treatment by abdominal hysterectomy. Adhesions preventing the relief of impaction, will call for an operation as may be determined by placing the patient under the influence of ether for the examination.

It has been said that the subperitoneal form of myoma does not usually call for surgical interference if the tumor does not grow rapidly, if it is not attended with attacks of peritonitis, if it has developed in the upper half of the uterus and does not lead to uterine flexion and other displacements of the pelvic organs, or to impaction below the sacral promontory. Conversely, the necessity for surgical interference is apparent in all other cases, but while the treatment of impaction with the patient in the knee-chest position and the cervix drawn upon by the tenaculum may sometimes liberate the mass from the true pelvis, time may be lost and the degenerative changes which increase the fatality after operation are likely to ensue under conditions heretofore considered favorable. Pedunculated tumors of the subserous variety are not as innocent as we might infer, especially when the stem of attachment is long and thin, for torsion may cut off the blood supply to the tumor and lead to necrosis. Looping of the intestine may cause obstruction of the bowels.

The submucous variety with repeated hemorrhage would seem to me to require the most prompt treatment by the radical operation. The inefficiency of curettement in some of these cases has been dwelt upon. It is now necessary to mention some of the degenerative changes which ensue, and while the frequency with which these changes occur may be open to discussion, the likelihood of such occurrences must always be kept in mind. The most important local changes are softening, edematous enlargement, calcification, suppuration and malignant degeneration.

Martin reported 205 cases in whom there were 10 suppurating fibroids, 11 edematous, 3 telangiectatic, 6 sarcomatous degenerations.

Eastman reported statistics, compiled from 169 cases operated by himself, as follows: 1 suppurative fibroid, 10 necrobiotic, 4 telangiectatic, 7 cystic, 2 calcareous, 3 myxomatous, 3 adenoma-carcinomatous.

The impossibility of diagnosing these conditions before operation is apparent but the course of all such cases is pathological and affects the results of surgical treatment more than is generally admitted, for all of these conditions affect the general health, which, combined with loss of blood and the influence of mechanical obstruction, due to increase in size or

unfavorable location of the tumors, leads to serious complications, affecting the liver, kidneys, or heart.

Even calcareous degeneration—nature's most favorable method of guarding against rapid growth—may become the source of great pain from peritoneal irritation, as was the case in one of my patients from Huntingdon, Pa., whose calcareous nodules became as sharp as pin heads and necessitated removal to secure relief from irritation.

The fallopian tubes and ovaries are subject to interstitial changes in many instances, in consequence of fibroid growths.

Fatty liver and nephritis are due to vascular obstruction, and large tumors often cause conservative hypertrophy of the left heart. Frequent hemorrhages lead to brown atrophy or fatty degeneration of the heart muscle. Peritonitis, binding the tumor to the neighboring structures, may lead to persistent intestinal torpor or even obstruction.

The age at which the menopause is most generally established, becomes the most treacherous, and the results of operation *before* this period have been most satisfactory.

Respecting the influences exerted upon these growths by pregnancy, we recognize the fact that sessile subperitoneal tumors of medium size situated in the upper half of the uterus are likely to be favorably influenced by the involution of the uterus, following parturition.

Many tumors as large as oranges, situated in the safety zone, if not associated with other tumors, may entirely disappear, provided the patient can nurse her baby.

Tumors involving the lower portion of the uterus are in every way more dangerous and deserve to be classed by themselves.

Early abortion is apt to occur from tumors in the fundus, whilst premature delivery is often induced by those of the cervical portion. If they grow in the cervix, and a miscarriage occurs, it often is incomplete, as some of the products of conception remain pent up, to be infected by septic influences. In these cases imperfect drainage and many conditions which tend to thwart our efforts to secure good results, are present. If these tumors, growing from the cervix, burrow into the broad ligaments, they may lift the uterus and by filling the pelvis underneath the peritoneum, they become the most formidable growths that we are called upon to remove. They cause

great pain and often seriously displace the ureters. It is this variety that complicates pregnancy, more than any other. Johnson affirms (Hart and Barbour) that during pregnancy or labor, one-third of the mothers and more than one-half the children die.

Hemorrhage, or severe and continuous pain, will call for early interference, by a produced abortion or complete hysterectomy; for the expectation of the subsidence of the symptoms from waiting, is seldom realized. The rapid and excessive development of the uterus, results in such pressure upon important organs as to lock up the emunctories, causing impaired nutrition, and with the occurrence of hemorrhages difficult to control, the patient's condition becomes serious.

It has been stated that the mortality after the removal of the intraligamentous fibroid tumors, reaches 25 per cent. The occurrence of pregnancy as a complication will increase this ratio. In all cases in which fibroid tumors complicate pregnancy near to full term, the following questions arise, viz., Shall we assist in the dilation of the cervix by mechanical means or shall we resort to Cæsarean section: and shall the latter be followed by hysterectomy and a complete poro-operation?

If there is perceptible progress made in the natural process of cervical dilatation, we will be disposed to wait and assist the process, but if efforts at dilatation are ineffectual, Cæsarean section will be resorted to, *before* it is too late to save the life of either the mother or the child.

As the Cæsarean section is attended by more than the usual risk on account of defective uterine contraction and consequent hemorrhage, from the presence of the tumor after the removal of the child and the placenta, and as defective uterine drainage adds another factor to the risks incurred, a poro-operation is likely to be called for. The removal of the uterus entire, after the child and placenta are extracted, becomes the only safe course, in those cases in which the tumor is low in the pelvis.

The most favorable cases are those in which the tumor is higher and can be enucleated from its bed, leaving the uterine wall intact, removing the obstruction to the passage of the child per vias naturalis, and leaving the organ restored to its natural condition and functional action. No obstruction from

the presence of the tumor,—means no operation in all cases provided other conditions are favorable; but obstruction means operation, even while other conditions are favorable.

After parturition, degenerative changes afford indications for early hysterectomy when accompanied by rise of temperature, tympanitic distention, and local tenderness of the abdomen.

Dr. Russell Andrews has reported to the London Obstetrical Society a case treated by abdominal hysterectomy, three days after delivery, in which a large fibroid had undergone necrosis. The patient recovered.

From these considerations, we have to think of securing in such cases,—in which fibroids complicate pregnancy,—abortion before the viability of the child, if the cavity of the uterus can be properly drained; otherwise myomectomy or hysterectomy. The latter is generally to be preferred.

In conclusion, the indications for operative treatment are derived from a careful consideration of all the symptoms produced, or at least referable to the growth, taking into consideration the ever probable increase in the danger from a delayed operation, due to heart, kidney, or liver changes, supuration and necrosis of the tumors and thrombosis somewhere in the pelvic vessels, with consequent danger from pulmonary or cerebral embolism.

Persistent and profuse loss of blood often leads to fatty degeneration, and in this connection the heart muscle becomes incapable of satisfactory functional action. Fatty cardiac degeneration is responsible for many deaths after an operation and thrombosis and embolism may develop very suddenly and lead to a fatal termination, which cannot possibly be foreseen.

As functional action in all the important organs becomes seriously impaired from persistent loss of blood, the symptom alone should be a strong indication for surgical treatment.

Mechanical pressure,—interference with the circulation,—leads to impaired digestion, hepatic torpor and renal and cardiac insufficiency.

Whilst thoroughly convinced of the prophylactic efficiency of our remedies in controlling hemorrhage, and in the general improvement of the health of patients in whom these tumors are found, I am nevertheless fully convinced of the necessity for the earliest interference by surgical means in all cases in which this treatment cannot be systematically pursued or in which its effects fail to meet our earliest legitimate expectations.

NEURASTHENIA.

BY C. E. SAWYER, M. D.

In discussing the subject "Neurasthenia," I deem it advisable on this particular occasion to consider it comparatively rather than teratologically and for that reason I have chosen some other common forms of nervous diseases with which to compare. I choose these particular ones, first, because they are so similar in their early manifestations. Second, because they represent both functional and organic disorders. Third, because they exemplify the fundamental principles to be considered if the means employed are to succeed.

Experience teaches that most of the chronic diseases of a protracted nature are due, first, to poor circulation. Second, to imperfect nutrition, and since these are common causes, and since they are always favorably influenced by orificial methods, it is easy to understand how orificial surgery has such a universal field for application and I think it will require but a fair presentation of neurasthenia and some kindred affections, to prove conclusively that the use of orificial methods is always indicated in any of the disorders cited.

The special classes of cases to which I am pleased to call your attention are, neurasthenia, hysteria, locomotor-ataxia, and general paresis. At first thought it may be said that some of these cases are not common and should not therefore be included, but investigation of statistics, which the limitations of this paper will not allow me to present, and careful consideration of clinical records which may be found in any active practitioner's office, will demonstrate that they are all more common than ordinarily supposed.

Since it is generally admitted that these particular classes of nervous diseases are on the increase, likewise that the results of former methods of treatment were not entirely satisfactory, it becomes necessary in properly managing and caring for these subjects, to correct the shortcomings of the past, so it will be to these discrepancies that I shall devote my attention.

Past experience and observation teaches that the occasion of a large part of the imperfection of former methods has been due, first, to a lack of care in early diagnosis; second, to a want of thoroughness in the individualization of the case. Third,

to the need of special forms of treatment. Fourth, to the necessity of mental and physical training. Fifth, to the fact that sufficient time has not been devoted to the form of treatment employed.

It is a difficult matter, indeed, in the premonitory stages of these disorders, to differentiate the functional from the organic, the mild from the grave, and yet it is very essential that we make no mistake in this regard if we would succeed, for upon our diagnosis depends the form of treatment, and upon the proper treatment depends the success or failure of the case.

My own experience teaches that many of the common forms of nervous diseases are allowed to drift into dangerous channels, because the first attention given by the general practitioner is too cursory, or later in the trouble after a specialist has been consulted because they have been treated by name or pathological conclusion, rather than by fact and physiological demonstration.

It is the commonest error to find these cases unrecognized by the first physician to whom they go, and it is quite as common to find them dubbed this, that, or the other, later on in their history only to be told that they are incurable.

There is a way to prevent these direful consequences and I shall hope to help cite the way. If I should seem harsh in my charges, I would remind you that it is only because I wish to be emphatic in my impressions.

Whenever the doctor assumes the rôle of director to a nervous patient, he takes upon himself a great responsibility. It is not enough that he should simply name the disease, it is absolutely necessary that he should know positively the true nature of the trouble and the earlier he fixes his conclusions, the better for the patient, therefore it becomes the duty of everyone treating or directing nervous cases to be sure of the ground.

It is a very common thing for the physician first seeing either of these classes of cases, to be lax in his investigation, he takes the subjective symptoms, makes some medical prescription, and allows the case to drift along. This laxity of method, this imperfect procedure is often the occasion of great disaster, therefore my first suggestion would be care and precision in obtaining the complete details of every case.

If the patient appears inclined to complain without cause,

or if the symptoms presenting are of a grave type, do not conclude at once that you have a chronic willful grumbler, or a hopelessly incurable subject, for however marked the subjective symptoms, one may be mistaken; because of this it is always well to exhaust all means of information before rendering a decision.

To aid in the matter of differentiation I shall present some of the chief characteristic symptoms of each of these maladies, leaving the details and subjective conditions as supporting evidence to be obtained as the study of the case progresses. Our first consideration, therefore, will be with the neurasthenic subject.

Neurasthenia.

Neurasthenia, as the term implies, is an exhaustion of nervous force, a lowering of physical vitality, largely the result of disturbed nutrition. In the studying of the neurasthenic case the special factors which present are, a neuropathic tendency, a predisposition by family inheritance to nervous disturbances. In connection with this, we find almost invariably the history of some more or less severe shock; closer investigation shows likewise that he has been the subject of various excesses, his general appearance indicates autointoxication. His blood is always deficient, both in quantity and quality. This may be demonstrated by hematological examination, which should be made in every case. Invariably the neurasthenic subject shows a low percentage of hemoglobin, a decrease of red blood corpuscles, and a disturbed relation of the various constituents of the blood, characteristics which are peculiar to the neurasthenic and therefore very valuable as diagnostic findings.

Again we find as a special feature of the neurasthenic subject, marked muscular weakness, which is demonstrated by the dynamometer, therefore dynametric tests should always be made. There is almost invariably a slight rapid tremor of the hands, tongue and lips.

The chief reflexes are usually exaggerated, the pupils are frequently dilated and occasionally unequal. Vasomotor disturbances are shown by cold feet and hands. In fact everything connected with the patient bespeaks lowered vitality, the conditions of which the neurasthenic complains so far as disturbance of tactile sense, the reflexes and muscular ability is concerned do really exist and the disturbances of this kind will

be found to follow anatomical and physiological lines. That is to say, if there are sensory or motor disturbances they will be found along fixed anatomical tracts. If a nerve is hyperesthetic or anesthetic, the hyperesthesia or anesthesia will follow the distribution of a special nerve trunk, while in hysteria these same disturbances will be found without regard to anatomical distribution.

In this same connection, I would again remind you of abnormal excitability of the cardiac nervous system. This disturbance of the heart's action should not be overlooked, for, although it is functional and erratic, in my opinion, it has much to do with the neurasthenic case and consequently should always be weighed carefully, both in diagnosis and in the adoption of plans of treatment.

From these objective symptoms, such comparisons may be made as to fix the real nature of the trouble and therefore eliminate such doubt as might arise in matters of diagnosis, while all of these symptoms indicate the employment of official means.

Hysteria.

The hysteric is likewise a neuropathic subject, but differing from the neurasthenic, in the fact that the manifestations of his disorder are chiefly emotional; the neurasthenic runs along in an even tenor, while the hysteric will pass almost instantly from quietude to extreme convulsions, from peaceful pose to the worst of distortion.

The symptoms of the hysteric are always spasmodic. He is erratic and uncertain, seeks publicity, courts sympathy, lacks stability of character, has no reserve force and very limited resources.

Without the slightest cause, he may pass instantly from the profoundest depression to the height of exhilaration. In fact everything about him shows a lack of willful control. In examining this patient we find the tactile sense disturbed. Almost invariably we find the hysterogenic zones, which on the anterior surface of the body correspond to center of the epigastric region, the right ovarian region and the left hypogastric region. This constitutes a more or less complete triangle of tender points which is almost pathognomonic.

Couple these with the anesthetic or hyperesthetic areas of

varying extent which manifest themselves without regard to the distribution of nerves, and we have a sufficiently complete picture to warrant at least a differential diagnosis. To obtain these facts it is incumbent upon the physician to care enough in his examination to know whether or not these conditions do really exist, therefore it should be the invariable rule in examining for the common forms of nervous disorders, to strip the patient and go over the body in detail, examining with care for every evidence of neurotic disturbance, and in making such examination be sure to examine the orifices, for here is often to be found the only key to the situation.

In the hysteric subject the tactile senses are not only much disturbed but the reflexes are also unequal, that is to say, they do not bear out a constant relationship with the sensory disturbances. There is no disease with which we are familiar that presents as many problems as does hysteria, a disorder that may simulate everything is really a difficult one to recognize, but bear in mind the fact that rules may be established whereby deception is next to impossible and that official treatment rarely fails.

Locomotor Ataxia.

Locomotor ataxia in its earlier stages is oftentimes as difficult of diagnosis as any known disease, therefore we should always remember that the most penetrating searchlight should be thrown upon every symptom in the least indicative.

Locomotor ataxia occurs almost invariably in subjects of syphilitic history, the symptoms of the first stages are uncertainty of gait, darting pains in the legs or rectum, numbness of feet, impaired vesical control, diminished sexual power, loss of knee jerk. These symptoms all continue growing worse and worse until the power of walking is lost and until the possibility of cure has elapsed, so that it becomes necessary to notice carefully the early manifestations of the disorder if we would save our patient from a life of misery. It seems unnecessary to call your attention to the Argyll-Robertson pupil, to the paralysis of the muscles of the eye, to the Romberg symptom and atoxic gait, except to emphasize the cardinal indicators of the trouble and to impress the need of thoroughness in the following out of details and to again remind you that official surgery has cured where all other means have failed.

With all of the signs interpreted aright, much good can be accomplished. If they are overlooked much harm may result.

General Paresis.

General paresis of the insane is the most deceptive of diseases because it invades so slowly and because its physical signs are so similar to other nervous disorders, therefore it is absolutely necessary to look well to both the physical and mental aspect of the picture, for here, as in locomotor ataxia, we find many symptoms very similar. The loss of pupillary reflex, unequal pupils, tremor of the hands, exaggeration or loss of knee jerks are all objective signs of importance, but they are only really indicative when considered with the mental irritability, the expansive idea, the defective memory, and the loss of self-control. The greatest similarity exists between paresis and neurasthenia, the marked difference between them being that the neurasthenic notices every symptom immediately, describes it fully and reasons out its significance, proving thereby that he is ill. On the other hand the paretic thinks he is well and attaches no significance to any of his symptoms. This fact is well worth remembering, for it is characteristic.

The paretic never cares to talk of himself except of his own plans and schemes, the neurasthenic does not care to talk of anything else but his symptoms and his afflictions.

If a few leading principles are always kept in mind, the diagnosis of the common forms of nervous diseases is simple enough, providing always that care in details goes hand in hand with precision in examination.

Individualization.

Presuming that we have made a correct diagnosis of the case, our next attention turns to the individual himself. Much depends upon the proper interpretation of this part of the subject. We must know our patient, for if we do not, we will fail. The general character of the individual must be understood, and in the carrying out of this idea we should study temperament, investigate habits, understand idiosyncrasies and know of social and family relations, for without a proper understanding in these regards, we will be handicapped if not defeated. If I were asked for the chief causes of success in the handling of common forms of nervous diseases, I should say it was a per-

fect knowledge of the individual, for no treatment can be well directed or successfully applied which does not defer to personal characteristics.

There is no single highway leading to fame in the treatment of the common forms of nervous disease. Skill, tact and resource are all essential. In matters of treatment of any of these classes of cases, it is always well to bear in mind whether the disorder is functional or organic, that we have to deal with both the mental and physical side of the subject, that time is an important factor and that official treatment always has a place. In the treatment of hysteria and neurasthenia, our greatest concern is that we may have on the one hand depression of all the forces, both physical and mental, while on the other we are as likely to have exhilaration and excitement, therefore we must be able to control extremes.

To do this best it is not only necessary to treat our patients scientifically, but also to educate them to self-control. In the after treatment of hysteria there is absolutely no force equal in remedial influence to a few minutes' daily talk to the patient in which they are assured of the recovery and are impressed with the necessity of self-control. Neither the hysteric or neurasthenic should be allowed to talk to others of their ailment. Nothing is more disastrous than a constant harping on one's affliction. The necessary self-poise, confidence, and assurance is not obtained by the use of drugs and the doctor who relies upon these alone is sure to fail, he must employ educational policies. He must use means that will equalize the circulation.

Sickness, after all, is but a disordered system in things and unless bad system is corrected, disease abounds. Physical training, persistent effort in exercise is always necessary. Every neurasthenic and hysteric subject should have some physical routine to follow every day. These are the cases that should be taught to breathe, to eat, to sleep, to rest, to exercise, to play and to work methodically, systematically, regularly.

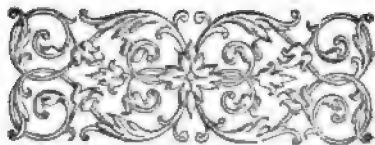
Strange as it may seem, the same rules are applicable to the locomotor ataxia and to the earlier stages of paresis. In all of these cases, the assimilative forces are incapable, the eliminative powers incompetent, and the co-ordinating ability impeded, therefore it becomes necessary to do everything within our power to improve nutrition, influence waste, and control mo-

tion. Thus it will be seen that in all of these grave cases, the principle of orificial philosophy is the fundamental principle to be employed, for here is the ever apparent need of improved circulation and of better nutrition.

In the locomotor ataxic and paretic organic changes are continually taking place. The regular nerve channels have become obstructed. The avenues of trade are blocked by the débris of disease. The congested thoroughfares are so obstructed as to prevent the proper operation of nerve function.

Because of this the muscles become sluggish in operation and beyond control unless by persistent and patient effort they are kept in co-ordination. The paralyzed ataxic leg and the paretic brain both require stimulation by exercise and orificial methods. The locomotor ataxic should practice hours every day in the movement of the afflicted parts. For the feet special diagrams should be made on the floor and first one limb and the other should be taught to traverse them. For the arms and hands similar prescribed line of exercises should be followed assiduously from the appearances of the very first symptom denoting the character of the trouble.

Allow me to say in summarizing that in neurasthenia and all kindred diseases, we should ever bear in mind that modern methods in diagnosis, persistent application of orificial methods and a daily systematic régime of physical and mental suggestions will do much to sustain the reputation of the medical and surgical profession and to cure that vast army of nervously afflicted that are daily appealing to us for relief from their invalidic shackles.



ULCER OF THE STOMACH.*

BY EPHRAIM D. KLOTS, M. D.,

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Synonyms.—Ulcer of the stomach is also described as *Ulcus ventriculi rotundum*; *Ulcus pepticum seu rodens*; *Ulcus ventriculi chronicum perforans*.

Definition.—Ulcer of the stomach is a condition which may be described as a dissolution of a circumscribed area of the gastric mucosa, with little or no tendency toward healing; productive of pain, tenderness, vomiting, hemorrhage, and, if sufficiently severe, perforation of the stomach wall.

The condition was first described by Jean Cruveilhier, of Limoges, France, in 1829.

Etiology.—The etiology is still vague. Many theories have been advanced to account for the condition, but no definite causative factor has been demonstrated that will apply to all classes of cases.

Females are afflicted more frequently than males, in the ratio of two to one.

The periods of life during which it is more frequently seen are middle life and later in advanced life. To be more exact, ulcer of the stomach is not liable to occur between the ages of one and twenty and forty and sixty, whereas between twenty and forty, and after sixty years, it is common.

Gastric ulcer is an exceedingly prevalent disease in some localities, and almost unknown in others. In Copenhagen, Stark has placed the percentage as high as thirteen and Von Sohlern is authority for the statement that the greater part of Russia and the adjacent borders of countries which bound it on the middle west are practically exempt. He believes this apparent immunity is due to the fact that the inhabitants live chiefly on vegetables. This diet is abundant in potassium salts and results in the blood being more richly charged with potassium, a condition which he claims has the faculty of preventing the development of ulcer. He advocates a vegetable diet as a prophylactic.

Individuals in certain occupations have been supposed to

* Read at the Clinical Club, December 15, 1905.

contract the disease more frequently than others. Thus shoemakers, tailors and persons whose work requires them to continually assume a crouching position have been pointed out as specially predisposed. Cooks have also been mentioned as frequent sufferers from gastric ulcer. Ewald does not believe that occupation is an etiological factor worthy of consideration.

Many observers have experimented on animals, with a view of determining the cause of gastric ulcer. Griffin and Vassale subjected the gastric mucosa to trauma and the action of irritating chemicals, only to find that when the animal was healthy the lesion artificially formed healed rapidly. On the other hand Quincke and Dettwyler first rendered their animals anemic by venesection, and later produced lesions which resembled real ulcer and were slow in healing, some even perforating.

These and other experiments too numerous to mention tend to demonstrate that some abnormal general condition of the economy must exist in order to produce a true ulcer.

Not a few instances have been observed in human beings, whose stomachs have been subjected to severe trauma without the production of ulcer.

Perhaps the most interesting case on record, in consideration of this subject, is that of an American sailor, who, in 1799, saw a juggler at Havre perform the trick of knife-swallowing, and developed a mania for the feat. In the course of several years he swallowed some thirty-five knives. Some passed through the bowel, but many never came away. Eventually he landed in Guy's Hospital, in London, where he died. The post-mortem showed a number of corroded knife blades, with parts of handles in the stomach and intestines. Two had perforated the intestinal wall without causing peritonitis, but there was no evidence of gastric ulcer, either recent or cicatrized.

Ulcer of the stomach is not an uncommon occurrence in chlorotic subjects, and, on the other hand, it is not infrequently met with in persons who have previously been in apparent perfect health.

Virchow was of the opinion that gastric ulcer was due to infarcts, caused by embolus or thrombus blocking the circula-

tion of certain areas of the mucosa, the subsequently necrosed portion being easily acted upon by the gastric juice. This seems a plausible theory, but it has been attacked by some observers on the ground that they failed to discover evidence of thrombus or embolus in the region of the ulcer. It would be fair to say that the original embolic or thrombotic process may have eventually become involved in the ulcer.

Another theory advanced by Pavy is that under normal conditions that alkalinity of the blood prevents the acid digestive juice from acting on the tissues, and that when this normal alkalinity is for any reason reduced sufficiently, the usual resistance is overcome and, given an overacid gastric juice, an ulcer results.

Hyperacidity of the gastric juice has many supporters as a cause of ulcer. In favor of it may be said that in a large majority of cases of ulcer of the stomach an examination of the gastric contents shows hyperacidity. This theory, however, does not explain the occurrence of ulcer in a stomach whose secretion shows a normal or even reduced acidity.

In view of the fact that the intestinal ulcers of typhoid fever are definitely known to be caused by a specific micro-organism, and that any ulceration of the intestinal tract below the duodenum is now generally considered to be due to microbic invasion, Box, in the *British Medical Journal*, February 8, 1902, is of the opinion that ulcer of the stomach is due to bacterial infection of the lymphoid follicles of the stomach. He cites several instances where two ulcers have been found; the second on the opposite wall, in contact with the first when the stomach was empty. One ulcer showed evidence of being more recent than the other and had likely received its infection therefrom. There is no substantial evidence that ulcer of the stomach is due to specific infection.

The writer leans toward Virchow's theory of infarct. The stomach is an organ which by force of its function keeps its tissues in frequent agitation. Given a subject whose arterial system is disposed to sclerotic or inflammatory changes, the tendency of rupture of an arterial wall and the formation of a thrombus is well marked. A small infarct in the liver, spleen or other organ might readily resolve, but subject it to the destructive influence of the gastric juice, and it is fair to infer that the lesion we are considering could easily develop.

Pathology.—Ulcer of the stomach is shaped like a crater, the base being smaller than its margin. It always occurs in those portions of the membrane which have been exposed to the action of the gastric juice. They have been found in the duodenum, and even in the lower part of the esophagus.

In size they vary from a half to three-quarters of an inch in diameter. Rarely they grow to enormous proportions, even to five or more inches in breadth. At times they are very small. At one of the writer's autopsies, at the Metropolitan Hospital, an ulcer, which had corroded an artery and caused death from hemorrhage, was not more than a quarter of an inch in its greatest diameter.

Usually the edges are sharply defined, and they are round, but they sometimes assume an oblong shape. The base may be smooth or covered with a thick tenacious mucus. Microscopically the peptic glands are cut off at the margin of the ulcer.

When an ulcer heals a cicatrix is formed, and the portion of the mucosa where it existed loses its function.

When an ulcer has existed for a long time the tissue surrounding it is apt to become the seat of an inflammatory process and a large indurated mass may result. If this comes near the cardiac or pyloric orifice, stenosis is almost inevitable. This condition may also be brought about by contraction of the scars of healed ulcers.

The ulcerative process may corrode the walls of an artery and penetrate its lumen. The intensity of the resulting hemorrhage depends on the size of the vessel involved.

When the ulceration is sufficiently severe to penetrate the deeper structures, perforation may take place. Previous to the perforation, inflammatory adhesions may be formed and, according to the locality of the ulcer, the perforation may become the source of communication between the stomach and liver, spleen, pancreas, colon, duodenum or any adjacent structure. By this means perforation may occur through the diaphragm, pleura and lung to the bronchi.

Owing to its free motility in this region, with less opportunity for the formation of adhesions, a perforating ulcer of the anterior wall is apt to communicate directly with the peritoneal cavity.

The locality of gastric ulcer is, in the order mentioned, as follows in point of frequency: Lesser curvature, posterior wall, anterior wall, pylorus, cardiac orifice, fundus and greater curvature.

In about twenty per cent. of the cases two or more ulcers exist.

Symptoms.—The symptoms vary in the degree of their intensity according to the severity of the lesion. There is no doubt that ulcer has existed in persons, and eventually healed, without having caused symptoms which would lead to any further diagnosis than indigestion or dyspepsia.

Post-mortem examinations often reveal the presence of a cicatrix, undoubtedly due to ulcer, without a clinical history of such a condition ever having existed.

Perhaps the most prominent symptom is pain. Sooner or later it invariably occurs, and is located at the site of the ulcer.

It is of a burning or boring character, and is located somewhere in the epigastrium. At times it is only complained of as being in the back, possibly when the ulcer is located in the upper portion of the posterior wall. Again it may be well to the left side and mistaken for intercostal neuralgia. It is usually located in a fixed spot, over a small area of the epigastrium, immediately below the sternum. In the great majority of cases the pain is increased by pressure, and the tender area can be sharply defined by palpation. The clothes are worn loosely, men leaving their waistcoats unbuttoned and women giving up their stays.

Frequent palpation is a poor procedure, as it not only incites a paroxysm of pain, but may be productive of hemorrhage or perforation. The diagnosis having been made, this performance should be dispensed with as unnecessary.

Cruveilhier described a pain, characteristic of gastric ulcer, which occurs later, when the localized epigastric pain and tenderness have existed for some time. It is a gnawing, more or less constant pain, located in the back, to the left of the spine, in the region of the last four dorsal vertebræ.

In some rare instances the pain is relieved by pressure; not by the pressure of palpation, but by a steady, supporting pressure, over a surface greater than the tender area.

As a rule when the stomach is empty the pain is greatly diminished or absent. The ingestion of a meal brings it on, generally within a few minutes. The greater the amount and the coarser and more indigestible the quality of the food, the more severe the pain. Easily digested, liquid food may be taken without producing a paroxysm.

Over-distention of the stomach from any cause produces an increase of the pain. Vomiting relieves it. Thermal shock seems to influence the pain. This is specially noticeable with cold, although in some iced drinks are more acceptable than hot ones. Food at the temperature of the body is the least irritating.

Vomiting is another almost constant symptom, and occurs soon after eating. It is not often accompanied by much nausea, and is due to the irritating influence of food. The vomited matter contains particles of undigested food and considerable mucus. In the absence of hemoptysis, it may contain traces of blood, which may only be determined microscopically. *Sarcinæ* and yeast fungi, which are so commonly found in cancer of the stomach, are rarely found.

Hemoptysis may occur at any time. It may be slight and easily controlled or so profuse and persistent as to rapidly cause death. It is usually bright red, but in the absence of recent vomiting, if the bleeding is slow and moderate, it may have the coffee-ground appearance which is characteristic of cancer. A large quantity which has been retained for some time may have the appearance of thin tar. In case of hemorrhage blood also appears in the stools. The chemical test for hemoglobin or the microscope would settle any doubt of its presence.

The anemia and emaciation of patients who have suffered for any great length of time from gastric ulcer becomes pronounced. The anemia is caused by two conditions, hemorrhage and inanition.

The refusal of these patients to eat is not from true anorexia, but more a habit formed from the experience that the taking of food causes pain. I have in mind a patient of mine, who was suffering from gastric ulcer, saying that she would give anything for a "table d'hôte" dinner, but that she would not eat one for the world.

We have already considered the possibility of these ulcers perforating into adjacent tissue or organs. When this occurs the symptoms will depend on the locality of the ulcer. It may happen without sudden or grave manifestations, or the symptoms of an acute abscess may develop. The perforation may take place into a portion of the peritoneal cavity which has previously walled off by inflammatory adhesions. From one point of view this may be considered a fortunate occurrence. By far the most serious accident which may result is a sudden perforation into the general peritoneal cavity. Unless rapid and radical measures are taken, death is inevitable. It may happen without apparent direct cause, or there may be a history of a blow, a fall, an attack of vomiting, an urgent endeavor at stool, the ingestion of a large meal, or, in fact, any act which would unduly irritate the stomach.

There is a sudden and severe pain in the abdomen, accompanied with collapse, and the signs of a general peritonitis soon appear. The abdomen becomes distended and exquisitely tender; vomiting, fever, a weak and rapid pulse and the facies Hippocratica make the diagnosis conclusive.

It is well to remember, however, that the gastric fermentation is not a symptom of ulcer of the stomach, and that abdominal distention may not occur until a considerable time has elapsed after perforation has taken place.

Diagnosis.—Ulcer of the stomach must be differentiated from cancer of the stomach, chronic gastritis, gastralgia and hyperchlorhydria. It is not within the scope of this article to enter into the details of the symptoms of these diseases, and I will only review with precision the more prominent of this condition. Einhorn has devised a table of the differential diagnosis which is admirable.

The pain, which is increased soon after eating, is localized over a small area and increased by pressure.

The vomiting occurs soon after eating.

There is generally a marked increase in the normal activity of the gastric juice.

Hematemesis of bright red blood.

The examination of the gastric juice should be made from vomited matter. It is unwise, when entertaining the least suspicion of the existence of ulcer of the stomach, to introduce an instrument of any kind into the stomach.

The symptoms of cancer of the stomach were most ably pointed out to us by Dr. Laidlaw at our last meeting, and retrospect of his paper will materially aid us in differentiating these two conditions.

Some of the large and indurated ulcers of the pylorus, owing to the consequent stenosis, give rise to symptoms which make it difficult to exclude cancer. Dr. Honan pointed out that the dilatation which follows this condition often gives rise to lactic acid fermentation, one of the diagnostic evidences of cancer rarely found in ulcer, and the indurated mass, which at times assumes a considerable size could easily be mistaken for a neoplasm.

Constipation is the rule in these cases.

Treatment.—The treatment of gastric ulcer is both medicinal and surgical. Dr. Ostrom has graciously accepted an invitation to discuss this paper, and in the greater part I will leave the surgical consideration to his disposal.

Rest and proper feeding are the two most essential features in the management of these patients. In most cases it is a difficult matter for the physician to control his patient and have him meet the requirements of proper treatment.

Leube and Ziemsen devised the rest cure, which in a general way may be described as follows:

The patient is put to bed for three weeks or more, and a competent nurse or attendant should be with him continually, to meet his every want and make the rest absolute. No physical effort of any kind should be allowed.

During the day a flaxseed poultice is applied to the epigastrium, and at night a wet linen compress is placed over the same area.

If vomiting and pain are severe, during the first forty-eight hours nothing is allowed to enter the stomach except the melted water from small pieces of cracked ice, which may occasionally be given.

To relieve the thirst, the mouth may occasionally be washed out with some refreshing solution.

In case it becomes necessary to prolong stomach starvation, nutrient enemata may be administered three or four times a day, after washing the colon with a saline.

When the stomach has become quiet we may begin feeding.

Milk is the choice of aliment "par excellence." It may be peptonized, but this is usually unnecessary. During the first week no other food should be given, and it is best warmed to a temperature of 100° F. At first very small quantities are given and frequently repeated; an ounce every hour. Even this small quantity should be administered very slowly; not more than a teaspoonful at a time. The quantity is gradually increased until four ounces is the dose. We must feel our way, pain and vomiting being our guide.

During the second week the quantity is increased and the interval of feedings lengthened to two hours. Eight to twelve ounces may now be given. If the stomach is specially tolerant, a raw egg may be beaten up with the milk once or twice a day.

Beginning with the third week, the interval is lengthened to three hours, and a small quantity of sago, rice, arrowroot or barley, thoroughly cooked, may be given with the milk at each feeding. In two or three days eggs, soft boiled "à la Russe," may be added to the diet, and later scraped beef or mutton. The approach to a normal diet should now take place, and this must be gradual. For a long time such articles of food as raw fruits, salads, green vegetables and those which are rich in cellulose are to be strictly avoided.

All remedies should be administered in solution.

If the gastric secretion is hyperacid, some form of an alkaline should be given at regular intervals. Einhorn advises a combination of magnesia, sodium carbonate and sodium bicarbonate.

For the patients who can not or will not go to bed we must institute a modified rest cure. They should be instructed to rest at every opportunity, and when about to be careful and deliberate in all their movements. Their diet can not be restricted too vigorously and should consist chiefly of milk and such easily digested food as has been advocated for the patients who are convalescing from the rest cure.

There are two remedies which are successfully used in the treatment of these ambulating cases: nitrate of silver and bismuth subnitrate.

The first is given in doses of one-quarter grain, in solution, one-half hour before meals, gradually increasing the dose to one-half grain.

The subnitrate of bismuth is given in doses of 30 to 75 grains, well stirred and suspended in water, three times a day, one-half hour before meals. Strange to say, these large doses do not increase the constipation.

In the writer's experience he has had decidedly good results with kali bichromicum. For hemorrhage from the stomach, absolute rest is imperative. Ice should be applied to the epigastrium and ergot administered hypodermically. Parke, Davis & Co. manufacture a useful preparation of this drug, dispensed in little sterile bottles ready for use, called ergot aseptic. Adrenaline by mouth, in doses of twenty drops, repeated as necessary, is a rational treatment.

For several years the writer has had eminently satisfactory results from the use of hypodermic injections of gelatin in controlling internal hemorrhage from any source. Absolute sterilization of the preparation must be insured. It has been my custom to have on hand, for use in these emergencies, a number of culture tubes, containing four drams (15 grams) of nutrient gelatin, prepared and sterilized according to bacteriological methods. An absence of any bacteriological growth in the preparation insures its sterility, and it is always ready for use. The dose is half an ounce—the contents of one of the tubes, to be repeated as frequently as necessary, and it is injected into the deep cellular tissue of the abdomen.

In case of collapse, venous infusion or hypodermoclysis may be necessary. Some advocate the addition of adrenaline chloride to the solution. Others believe that, owing to its action in increasing the general blood pressure, it adds to the danger of further hemorrhage. Should the temperature be subnormal, the ice should be removed from the epigastrium and warmth applied to the surface of the body.

When perforation occurs absolute rest is most essential. Large doses of opium should be given by suppository and ice applied to the abdomen.

There is perhaps no time when the efficient aid of a surgeon is so necessary as in these cases of perforation. The procedure under normal circumstances would be serious enough, but to add to the devastating result of a long illness and several hours of the shock produced by the onset of a general peritonitis a surgical operation, it is no wonder that the death rate

is so high. The technique of the operation should be as complete or as nearly so as circumstances permit. The physician should be on hand, with all the data at his command, to aid his colleague in localizing the lesion, and the anasthetist should be specially well versed in his specialty. Statistics have conclusively proven that the earlier the operation after perforation the greater the chance of success.

The question of surgical interference for severe hemorrhage should also be considered.

Old indurated ulcers, which materially interfere with the function of digestion and offer a grave prognosis, especially if located at the pylorus, should be seriously considered from the surgical point of view.

Discussion.

Homer I. Ostrom, M. D.: Your President has requested me to speak on the surgical side of the subject that has been so ably presented by Dr. Klotz—"Ulcer of the Stomach." In the few minutes at my disposal I can do no more than touch the most salient points, for the subject is a vast one and its adequate discussion would consume more time than remains for my use.

Simple ulcer of the stomach may be regarded as an innocent disease, for which surgical intervention may be required for its sequelæ, hemorrhage, perforation and stenosis, displacement and dilatation; which also, in many instances, have their genesis in the same local pathology.

At the outset, however, we meet with some embarrassment if we base a system of treatment upon the innocent or malignant nature of the stomach disease, for the line between the diseases that do not shorten life and those that contain, or develop a potency that invariably tends to physical disintegration, is oftentimes exceedingly fine, it being well established that in many instances malignancy is grafted upon innocence; that the certainly fatal tissue structures have their beginning in a focus that in cell type and arrangement differs only slightly from the normal organic plan.

Ulcers of the stomach, which at first, and it may be during a lifetime, remain simple ulcers, in no manner, save as they give rise to symptoms incident to their situation, interfering with life, may, without doubt, become the direct, or indirect,

cause of carcinoma. Especially is malignancy developed in the cicatricial tissue of a simple ulcer that has healed.

We are therefore confronted with the question, shall all ulcers of the stomach be considered innocent and treated surgically, only for the sequelæ as they arise, or shall we look upon an ulcer as the possible initial step in a malignant growth, and, having established the diagnosis, attack the disease upon that basis, anticipating the graver pathology by an early operation. Ulcers of the stomach may heal, and remain permanently cured without surgical intervention, but an ulcer in this situation introduces an element of uncertainty into the patient's future, for there is no definite group of symptoms to indicate when an ulcer will destroy the stomach walls, causing perforation of its coats, or when it has involved sufficient tissue to open a large vessel, giving rise to hemorrhage, or when cicatricial tissue will contract the stomach to such a degree as to seriously interfere with the passage of food into the intestinal canal, or when a carcinoma may be grafted upon the pathology of the simple malady.

These considerations point with no uncertain finger to the important and compelling position that surgery occupies in the treatment of gastric ulcers. We can not ignore the dangers that attend the disease, and, after a reasonable attempt to cure with medicine and diet, as suggested by Dr. Klots, surgical intervention should be offered the patient, and the condition regarded as belonging to surgery.

The operation for excising a gastric ulcer is attended with little risk. After opening the abdomen—a median incision, or one to the right of the rectus muscle, affords good exposure—a circumscribed hardness and induration of the stomach wall frequently marks the site of the ulcer, and will then enable us to select the best region for making an incision. If the ulcer is situated in the anterior wall, the incision should be elliptical to include the indurated structures; if in the posterior wall, the incision will be transverse, and in the situation most favorable for further manipulation. A short unjapaned Ferguson speculum will render assistance in examining the interior of the stomach. If the ulcer, or ulcers, do not readily come into view, a slit may be made in the omentum, through which a finger is thrust to the posterior wall of the stomach,

and on it sections of the mucous membrane successively brought into the incision. By this maneuver the greater portion of the interior of the stomach may be inspected.

I have had no occasion to operate upon any acute gastric ulcer, at a period when I believe such an operation would be the conservative treatment, diagnosis is almost impossible; but I have operated on two cases of chronic ulcer when no other symptoms than those that belonged to the ulcer were present. I curetted the base of the ulcer, which was reached through an anterior incision, incised its indurated borders and united the surface with silk sutures that included the entire thickness of the stomach wall. Both cases made good surgical recoveries, and have continued free from any derangement that can be attributed to a return of the former disease.

Two of the sequelæ of gastric ulcer call for prompt surgical aid: perforation and hemorrhage. Perforation of the stomach, or of any part of the intestinal tract, may be one of the most lethal accidents in medicine. It may, and usually does, occur without warning, and when it involves the anterior segment of the stomach, before adhesive inflammation can shut off the general peritoneal cavity, is followed by rapidly developing septic peritonitis, and death, when surgical aid is not at hand. When the posterior or inferior surface gives away, the immediate results are not so disastrous, but the development of subphrenic suppuration presents a grave complication, and one that later may require an extensive operation for its relief.

The abdomen must be freely opened, the incision extending from the lower ribs to the umbilicus. While I advocate a small incision in the majority of abdominal operation, I believe such an opening to be unwise when the point of attack is not certainly known, when an unobstructed exposure is necessary and when rapidity of manipulation makes so much for the success of the operation. The patient is usually profoundly shocked, and it is essential that the perforation should be found and closed as quickly as possible.

I well remember my first operation for perforation of the stomach from ulcer. It has left an indelible impression upon my mind of the necessity for decisive action, and the otherwise fatal termination that may be confidently looked for. The perforation had taken place in the greater curvature of

the stomach. By an unusual adhesive formation, undoubtedly progressive with the ulceration, the stomach had become adherent to the transverse mesocolon, so that when the walls finally gave away the escape of stomach contents took place underneath and behind the transverse colon, not into the lesser peritoneal sack. To reach the opening I was obliged to draw the colon well out of the wound. The manipulations were deep within the abdomen, and necessarily prolonged, and the patient succumbed to shock and sepsis, which were present when I saw him, some twenty-four hours after the perforation occurred. If the surgical aid had been rendered promptly, this patient might have been saved.

It is unnecessary to trim the edges of the ulcer. They are not concerned in the healing surface, this being confined to the peritoneal coat, when the stomach wall is inverted. A single stitch, including all the coats of the stomach, closes the perforation, and prevents further soiling of the peritoneum from this source. The surfaces of the stomach will then be gently cleansed with salt solution, using gauze for the purpose, and the peritoneum united with a double row of Lembert sutures. This part of the technique should be done with great nicety to provide against any possible giving way of the structures, or leaking from the stomach. I prefer to irrigate the abdomen, rather than depend upon dry sponging. It serves the double purpose of cleansing the cavity and of stimulating the heart. It must, if done at all, be done thoroughly, especial care being taken to reach the diaphragm and the renal fossæ. The patient should be kept in a semi-upright position for forty-eight hours, to favor drainage into the pelvis, where absorption is less active.

Artificial drainage of the abdominal cavity is becoming largely a matter of personal preference. Like every step in surgical technique, it has been misused, but it has its place, and, while I feel great confidence in the ability of the peritoneum to take care of harmful products, when I am suspicious of the sterility of the abdomen, I assist nature by providing an exit for the disease-carrying matter. I could talk long of this subject of drainage and its application, but time will not allow me to do so.

Hemorrhage is a frequent, but not a convincing symptom

of ulcer of the stomach. If the ulcer has eroded a large vessel, as the splenic or the coronary artery, the issue is rapidly fatal, and no treatment is likely to avail much. We should not, however, refuse to open the stomach and attempt to secure the bleeding vessels, even in the most unpromising cases, for without such interference the patient must die, while in surgery lies the only hope of recovery. If the ulcer can be located from the surface—it will be remembered that these ulcers are usually chronic, with indurated edges—and the bleeding point thus made out, ligatures can be quilted around the ulcer, by transfixing, without opening the walls of the stomach. This method will save time and shock, and if success is to be obtained in these grave cases it will be with the most rapid technique that is consistent with the requirements of the work to be done. The sutures pass through the entire thickness of the stomach, in and out, puckering the peritoneum.

The less urgent cases of hematemesis from gastric ulcer offer a more encouraging field for operative surgery. These are characterized by repeated attacks of hemorrhage, the eroded vessel, or vessels, closing spontaneously, which will temporarily control bleeding. The blood lost at one time may be so great as to cause syncope, and its repetition may induce dangerous anemia, from which convalescence is very slow.

Continuous bleeding, or repeated hemorrhages, which I usually associate with a chronic ulcer—acute ulcers rarely give rise to more than one or two attacks of bleeding—are amenable to two surgical procedures, either separately or as parts of one operation. The site of the bleeding, the ulcer, may be exposed, and curetted, and its surfaces closed with sutures, as in the method already described, or the stomach may be put at rest and allowed to contract—hematemesis has been found to be associated with dilatation of the stomach—by establishing a gastro-intestinal fistula—gastro-enterostomy, the latter operation being justified by the advantages that follow rest from functional activity, and the free drainage that is insured by excluding the pyloric orifice from the digestive canal, and providing an artificial opening through which the stomach is emptied. In other words, the established tenets of surgery are applied to the treatment of these cases, the operative field is cleansed and the parts are given the rest that is essential for their healing.

A combination of these two methods appears to be the most rational treatment for all gastric ulcers attended with hemorrhage, that demand surgical intervention. To insure healing by first intention—healing by granulation is slow and subject to many adverse influences—the gap in the stomach wall must be closed, and, to make sure of union of the sutured surfaces, it is necessary to place the stomach at rest, to stop its functional contraction and to prevent the accumulation of ingested matter. Therefore, a technique that combines gastropasty, and gastro-enterostomy, provides the most favorable conditions for a cure.

The additional time necessary for the two operations should not weigh against the unquestionable advantage of thoroughness, for an anastomosis between the stomach and the intestine can be established at the opening through which the ulcer is examined, and sutured, if this is the scheme upon which the operation is begun. I desire to emphasize the entire feasibility of this procedure and to express the belief that it will become the operation of election in these cases. The additional time consumed in suturing the stomach to the intestine is greatly reduced by the use of the Moynihan clamps, and with them can be accomplished in a few minutes.

Examination of the interior of the stomach is more easily made through an anterior opening, and such an incision requires less manipulation than is necessitated by a posterior opening, but through an abdominal wall incision at least four inches long, and with practice in managing the omentum and the transverse colon, good exposure will be afforded for opening the transverse mesocolon, and if, in drawing the stomach through this, its anterior wall is gradually teased out, the incision in the stomach can be made well to the front, and the disadvantages for examination, of the posterior opening, which should always be given the preference in benign cases, is greatly minimized.

The *bête noire* of gastro-enterostomy has always been the establishment of the "vicious circle," an escape of stomach contents into the proximal end of the intestinal loop or leg, or a regurgitation into the stomach from the excluded portion of the canal, but by abolishing the loop, as in gastro-jejunostomy, this form of post-operative vomiting has become less frequent. Anastomosis between the stomach and the jejunum, as practiced in Czerny's clinic at Heidelberg, where I first saw it performed, is based upon the anatomical relations of the jejunum to the stomach. The first few inches of this part of the intestine lie in contact with the posterior wall of the stomach, only a non-vascular portion of the mesocolon intervening. Further, the jejunum in this part is directed vertically and is without turns. Therefore, if in making an anastomosis the

jejunum is drawn as taut as may be consistent with surgical tension, no loop of intestine is left from which, or into which, it is possible for the stomach contents to regurgitate. As far as this sequela of the operation is concerned, it is as if the proximal leg had been cut off from the digestive canal by suture, or excision of the intermediate structures.

It is the consensus of opinion, that in making a gastro-enterostomy for ulcer, mechanical devices for establishing an anastomosis, even though saving of time, cannot replace sutures, because of the danger of the solid body falling into the stomach. This accident has been recorded in several instances, necessitating a second operation for the removal of the button. The stomach being the larger cavity, and hence offering the least resistance to the entrance of a foreign body, such would naturally fall into it, rather than into the intestinal canal, of lesser caliber.

My own gastro-enterostomies for ulcer of the stomach, gastrorrhagia being the urgent symptom, and the one for which the operation was performed, number seven. I have not felt that rest and drainage alone, as advised by some surgeons, are sufficient to cure the disease. The stomach is usually found dilated in this condition, and to encourage its contraction and the drawing together of the surface of the ulcer, drainage is necessary, but I have, as a preliminary operation to gastro-enterostomy, curetted the ulcer, and sutured the edges together in a direction transverse to the long axis of the stomach. The first two were anterior operations, the last five have been gastro-jejunistomies. In making this anastomosis, I have found the Moynihan clamps to greatly facilitate the manipulation. They assist in bringing the stomach through the incision in the transverse mesocolon, and hold the organs securely during the placing of the sutures. I have not used a button in any of my cases.

The question of suture material is important. I am not willing to trust sterile catgut; when placed within the stomach the digestive properties of the gastric juice will cause too rapid absorption. Chromic catgut would be the ideal material, but it seems almost impossible to render it sterile, and I cannot but feel that one runs considerable risk in using it. Fine celluloidal linen thread possesses many claims for favorable consideration. It is easily sterilized, and remains intact a sufficient length of time. I have thus far been well pleased with iron-dyed silk, and have used it for all my sutures. It is easily applied, and if sterile becomes encysted, and gives no further trouble. Ultimately it is absorbed.

I am aware that these seven cases have little statistical value—it will be understood that this series includes only my gastro-enterostomies done to arrest hemorrhage from an innocent

ulcer, and does not include my stomach operations for malignant diseases—but as far as curative results are concerned, they have been successful, and I have thus far no deaths to record.

My first case of gastro-jejunostomy developed rather severe vomiting, due I am confident to too long an intestinal loop; in my later cases I have drawn the jejunum tighter, and so I think, avoided regurgitation.

One case is especially interesting because of the severity of the gastrorrhagia, and the permanent cure that followed operation. When I first saw the patient he was bleeding freely. This condition had existed for some time, and with previous hemorrhages, covering several months, induced a state of profound anemia. Though the prospect of even a successful operation was not encouraging, I felt that his only chance lay in surgical interference. The stomach contained a considerable quantity of blood, after removing which the source of bleeding proved to be a large indurated ulcer situated near the pylorus. This I curetted through a posterior incision, removed the indurated rim, and sewed the surfaces together, the sutures including the entire thickness of the stomach wall. I then completed a gastro-jejunostomy, utilizing for this purpose the opening in the stomach through which the ulcer was treated, the line of suture being in the long axis of the stomach. The patient made a good convalescence, and has had no return of the hemorrhage or other symptoms of ulceration. This was the least promising case in my series, and is here mentioned only to illustrate the favorable results that may be obtained, even in the most desperate conditions. This patient could not have long survived the continued loss of blood, and reverting to my earlier proposition, had the ulcer when first diagnosed been operated on, he would have been saved from a dangerous state of anemia, and not been placed in jeopardy of his life.

Nature's method of curing an ulcer of the stomach, frequently results in stenosis; cicatricial tissue contracting at the site of the ulceration forms a stricture of more or less density. At the pyloric orifice, being the narrowest portion of the stomach, the effect of this vicious healing is most noticeable, but it may occur in any other part of the stomach, then causing an hourglass contraction, which, unless very pronounced, is attended with no more than retarded digestion, and its attendant fermentation.

Various operations have been proposed for the relief of benign pyloric stenosis. As a curative operation not much reliance can be placed on simple stretching of the opening. The passage is certain to contract, as the uterine cervix will contract after similar divulsion. If we could by dilators maintain the caliber of the opening until healing is completed, success might be more assured, but this is impossible.

To provide a functional pyloric opening it is not sufficient to excise the stricture, an anastomosis between stomach and intestine must be made as well, to insure against recontraction. Finney's pyloroplasty, as far as it goes, is planned upon correct mechanical principles, and scientifically meets the requirements of benign stenosis of the pylorus. This operation unites the beginning of the duodenum with the pyloric end of the stomach by an inverted U, or horseshoe incision, and thus provides an ample opening for the passage of food into the intestine. Much of the success of this operation depends upon freeing the adhesions that bind the pylorus to other organs, for its performance necessitates entire mobility of this section of the stomach. The flaw in Finney's technique is that it does not close the strictured opening, or enlarge it sufficiently to become a part of the newly constructed passage. I believe it would be safer to place a few sutures at the pyloric orifice for the purpose of insuring its complete closure; this could be done through the gastric arm of the horseshoe incision. Before suturing, the edges of the opening should be freshened to favor union.

Hourglass contractions of the stomach divide the organ into two parts, or pouches. This stenosis may be congenital, but is more frequently caused by the contraction of the cicatrix of a chronic ulcer. Gastrogastrostomy, which unites the two pouches by means of establishing a fistula between them, has been performed. The defect in this technique is the spur that remains, and over which, until the stricture becomes complete, some food will pass from the cardiac, to the pyloric sac.

If the constriction is within two or three inches of the pylorus, gastrojejunostomy will probably yield the best results. Or if the constriction is more central, a double anastomosis may be advisable, the same loop of jejunum serving for both openings. Here again the spur may interfere with the success of the treatment, for as long as the natural opening between the two pouches of the stomach remains, ingested matter may pass from one to the other. Would it not therefore be practicable to include the stricture in the anastomotic opening of the stomach, incising sufficient cicatricial tissue to insure against contraction? This would necessitate rather a long opening in the transverse mesocolon, but it would more perfectly unite the divisions of the stomach, and do away with the artificial spur.

Gastropexy, a prolapse of the stomach, is amenable to surgical measures—plicating the gastrohepatic, and gastrophrenic ligaments through an abdominal incision, or fastening the stomach to the anterior abdominal wall. Inasmuch as gastropexy is usually associated with dilatation of the stomach, and in consequence atony of its walls, gastro-enterostomy, by draining the organ, may be expected to assist in restoring its muscular function.

THE PATHOLOGY OF TUBERCULOSIS OF THE
FEMALE GENITALIA.

BY NORMAN S. BETTS, M. D.

Tuberculosis, in any of its clinical manifestations, is a subject which is to-day of considerable interest to us all. Its seats of possible involvement are so nearly universal that the physician, the surgeon and the specialist are alike concerned in any discussion of the manifold forms of the disease, and in the sphere of the gynecologist especially, the investigations and general interest in the lesions of pelvic tuberculosis are of such comparatively recent date that there still remains quite a field for fruitful research.

Without posing as a specialist in gynecology, I shall endeavor to present a brief synopsis of the present-day knowledge of the subject of tuberculosis of the female genitalia from an etiologico-pathological standpoint, believing it axiomatic that scientific prophylaxis, diagnosis and treatment depend primarily upon the knowledge of this same etiology and pathology.

History.—Concerning tuberculosis of the female organs of generation, very little was known until comparatively recent years. The first case on record was reported by Morgagni in 1744. From that time until 1850 only scattered cases are spoken of, and the disease has only received the attention which it deserves since the removal of tuberculous tubes and ovaries by von Mandach in 1181, and the discovery by Babes in 1883 of tubercle bacilli in the vaginal discharges. J. Whitredge Williams of Johns Hopkins Hospital has probably done more than any one to arouse a popular interest in the subject, which had been considered a rather unimportant complication of late general miliary tuberculosis or of tubercular peritonitis, the possibility of local primary infection being practically ignored.

Etiology.—The possible modes of invasion of these parts are unusually numerous; among the number may be mentioned the blood and lymph streams, the peritoneum, osteum abdominale, coitus, unclean physical examination, auto-infection by the patient's own fingers and by extension from adjoining organs.

The relation of Koch's bacillus to tubercular lesions is to-day a subject which needs no further discussion.

Tuberculosis of the genitalia is so rarely an isolated condition that there is frequently the greatest difficulty in discovering the point of original infection and in giving the lesions their correct chronological order. Infection may occur by the blood, without having caused any demonstrable involvement elsewhere—as seen in some cases of bone tuberculosis.

The question of primary or secondary character of lesions has been much discussed and is of interest from a scientific standpoint; however, the practical point is, which lesions are active, farthest advanced and most endanger the life of the patient. In the presence of an active advanced pulmonary phthisis we would not think of operating for an inactive, slowly progressing tubercular salpingitis.

Most pathologists agree that the most frequent modes of infection are by the blood stream and by extension from adjoining structures. Hematogenous infection is well demonstrated in puerperal women with miliary tuberculosis where the destruction is most extensive at the placental site. That the disease is most marked at the fimbriated extremities of the tubes when these structures are invaded has been considered proof, and probably with good cause, that infection has occurred from the peritoneal cavity, but, as this portion is decidedly the most vascular, is it not reasonable to assume that at least in some such cases the bacilli have reached the site by the blood stream (Williams) ?

Infection from the peritoneum is one of the most frequent modes of involvement. It has been demonstrated by Pinner and others that small particles of foreign matter, when introduced into the peritoneal cavity, tend to fall to its lowest portions, and are readily taken up by the currents of the tubes. According to Williams tubercle bacilli may pass from intestinal tubercular ulcers or other tuberculous organs into the pelvic peritoneum and be wafted into the oviducts without producing any peritonitis.

The lymphatics may form the pathway for infection, and are supposed to be the means by which bacilli may pass through the diaphragm from pleura to peritoneum. Infection may occur secondarily by perforation of tubercular ulcers or fistulæ from the intestine, from perirectal abscess, tubercular cystitis or tubercular disease of other parts of the urinary apparatus.

Frequency.—The greatest difference of opinion has existed among pathologists and surgeons concerning the frequency of genital tuberculosis in women.

There can be no doubt that a considerable proportion of all cases of tubercular peritonitis have involvement of the genitalia. The disease occurs most frequently between the ages of twenty and forty years, the period of greatest sexual activity, but no period of life is exempt, Brouardel recording a case at ten weeks and Krzywicki one at eighty-three years. In my association with Dr. S. W. Sappington of Philadelphia I recently found a caseous endometritis with tubercular pus tubes in an infant twenty months old.

Williams in a monograph on the subject makes a strong plea for more careful examination of all tubes removed for salpingitis, claiming that tubercular disease is much more frequent than is generally supposed and that eight per cent. of all genital appendages removed in Johns Hopkins Hospital are tubercular, and of these only twenty-five per cent. are diagnosable without microscopic examination.

Concerning the relative frequency of involvement of the different generative organs, all agree that the tubes are most frequently affected; the other organs, in the following order: Uterus, ovaries, vagina, cervix and vulva. The cervix at times shows a peculiar and unexplained power of resistance, a point observed in the case of the infant above mentioned. The lesions in the fundus were far advanced and a few tubercles were found in the vestibule about the opening of the urethra, but the cervix remained absolutely intact.

The question, which organ or part of organ was first involved, or in other words, which lesions are primary and which are secondary in a given case, is often an important and interesting one. Netter, in a report of four presumably primary cases in the *Archive für Kinderheilkunde* states that genital tuberculosis is generally primary in children, beginning as a salpingitis, and says that the tendency of primary lesions is to chronicity with connective-tissue production, numerous tubercles and little caseation, while secondary lesions are destructive rather than productive, rapidly tending to caseation with less typical tubercle formation. Baumgarten speaks of a greater number of bacilli and fewer giant cells in secondary lesions,

while in primary lesions he claims the reverse to be true. Both these authors, however, observe in a following paragraph that no such histological rules hold good invariably, and that in many cases it is impossible to discover where original infection occurred.

We shall now consider briefly the effects of tuberculosis on each of the female generative organs. The histology of the primary tubercle in any part of the tract is identical with that seen elsewhere, giant and epithelioid cells are the essential cellular elements of the nodule, which may or may not undergo coagulation, necrosis, caseation, liquefaction or, later, ulceration and abscess formation.

An interesting feature of genital and peritoneal tuberculosis is the absence or incompleteness of caseation in the retroperitoneal glands, while in intestinal tuberculosis the mesenteric glands undergo very early and rapid cheesy degeneration.

Vulva.—Tuberculosis of the vulva is the rarest form of genital tuberculosis, probably because these parts are better protected externally as well as from the fact that infection usually occurs from above. When present the affection is frequently secondary to tuberculosis of neighboring parts, or cutaneous abrasions have offered a favorable nidus for infection. The macroscopic appearances vary considerably. Miliary papules on an inflamed and indurated base break down and tend to coalesce, forming sharply outlined ulcers which are usually shallow, slowly progressive and accompanied by little pain or impairment of health. Discharges are most serous and when removed show the characteristic grayish-yellow granulations. The woody hardness of cancer is absent and hemorrhage is slight. The existence of multiple ulcers speaks for tuberculosis as against carcinoma and syphilis. Pulmonary tuberculosis is often coexistent, but in most cases the internal genitalia are found intact.

Vagina.—The many layers of squamous epithelium with the absence of glands makes the vagina especially unsusceptible to tubercular invasion, unless erosion has already occurred. Infection may be primary or take place secondarily from adjacent tubercular organs. The manifestations of the disease are usually confined to the posterior wall and frequently to its upper third, due to the usual mode of origin by tubercular secretions

flowing from an infected uterus. On the other hand, tubercular vaginitis may occur without involvement of any other portion of the genital tract, as in four cases reported by Lancereaux, and several cases are on record where a normal uterus intervened between tubercular vagina and tubes.

A case seen during the last winter in the Women's Homeopathic Hospital of Philadelphia showed a vesico-vaginal fistula without apparent involvement of any other organ. A well-marked pulmonary phthisis subsequently proved rapidly fatal.

The pathology here depends upon the etiology and the existence of complications, running a slow course when primary, the tubercles breaking down finally to caseous ulcers, which may coalesce or become quite deep. Miliary tubercles are scattered around the margins and fistulæ may occur.

Uterus.—Tuberculosis of the uterus is fairly common. The greater frequency of factors which favor the entrance of bacteria, as menstruation, catarrhal inflammation, pregnancy and the puerperium makes tubercular endometritis only second in frequency to salpingitis. Kelly says that sufficient emphasis is not laid upon the relationship of the puerperium to tubercular infection. A differentiation from puerperal sepsis may be necessary. Three forms of tubercular endometritis are met with: (1) miliary tuberculosis, with or without ulceration; (2) chronic diffuse tuberculosis or caseous endometritis; and (3) chronic fibroid tuberculosis.

The first form, miliary tuberculosis of the endometrium, has little clinical interest, death usually occurring from the effects of an acute miliary tuberculosis of all organs. Typical tubercles are scattered through the endometrium just beneath the epithelium, and depending upon their age and degree of caseation, the mucous membrane may be nearly smooth or show miliary spots of ulceration.

The chronic diffuse form, merely a later stage, is the most frequent. The walls of the uterus become covered with caseous material, the mucous membrane is almost entirely destroyed and tubercles in all stages of formation are seen scattered through the muscularis. As infection usually occurs from the tubes, the fundus is generally first involved and for some reason the process is usually confined to the corpus uteri, the cervix being rarely invaded. In the rarer cases where the cervix is affected

the fundus is generally normal. In the uterus, as elsewhere in the tract, the disease begins in the vascular part of the mucous membrane in close proximity to blood vessels and between the uterine glands. The centers of the nodule are usually formed by a giant cell surrounded by a zone of epithelioid cells, around which the connective-tissue perivascular spaces are infiltrated with small round cells. Cullen has shown that the gland cells later take an active part in the production of tubercle tissue, some of them at least being converted into epithelioid cells (Senn). The third or chronic fibroid variety of tubercular endometritis differs from the second in the excessive production of connective tissue in and around the tubercle, which tends to limit the disease.

Fallopian Tubes.—We now come to speak of tuberculosis of the tubes, the most frequent site of the condition in the genitals. The disease is usually bilateral, though frequently apparently of longer standing on one side than on the other. All the coats may be involved; in fact, Senn claims that "circumscribed plastic peritonitis is invariably present in all advanced cases."

Tubercular salpingitis occurs in three forms, miliary, chronic diffuse and chronic fibroid, corresponding to the classification of the disease in the uterus. Miliary tuberculosis of the oviducts differs in no way from the disease in any other mucous membrane. Sections show typical tubercles just beneath the epithelium and usually more numerous toward the fimbriated extremities. Caseation is slight and the ordinary round-cell infiltration of catarrh may or may not be apparent. This stage is not frequently seen, because it so rapidly merges into the second—chronic diffuse form. Here degenerative changes are advanced, the mucous membrane breaks down more or less completely, the muscular coat becomes infiltrated with giant-epithelioid cell tubercles and, the lumen at both ends becoming occluded, caseous material may accumulate in considerable quantities. Aran reported a case in which the distention was as high as the umbilicus. Williams was the first to describe chronic fibroid tuberculosis, which differs from other forms in the relative absence of caseation, the production of fibrous tissue and its chronicity. It is possible that, at least in some cases, this condition was due to preëxisting inflammatory changes, followed by a tubercular infection, since the dense adhesions of both tubes and ovaries in Williams' cases showed no trace of being tuberculous.

Ovary.—Tubercular disease of the ovary, while not common, is by no means a pathological curiosity. The condition is usually secondary and frequently bilateral. Infection may occur by the blood, in which case some trauma, as the rupture of a Graafian follicle, predisposes, or, as is much more common, the bacteria may reach the organs by way of the peritoneal cavity or tube.

Verneuil classifies tuberculosis here into two varieties: (1) diffuse tubercular infiltration of the entire organ, which is rare, and (2) encysted form, where the foci are large and undergo caseation, eventually forming abscesses surrounded by tubercles. This classification is accepted by modern pathologists. The histological characters and degenerative changes occur here just as elsewhere, the tissue being exposed to the same influences, except that the epithelioid cells from their origin strongly resemble the large cells of a corpus luteum, part of the epithelioid cells springing from the epithelium which lines the Graafian follicles, and part being furnished by the stroma of the ovary. As infection usually occurs from the tube the condition is generally seen as a tubercular abscess between the fimbriated extremity and the ovary, walled off from the general cavity by the plastic exudate of a peritonitis.

Placenta.—Localization of tuberculosis in the placenta is uncommon, but interesting from its relation to the question of prenatal infection. Caseous tubercles have been found in the decidua, villi, intervillous spaces and stroma. It is considered improbable that bacilli can pass through a normal syncytium; destruction or removal of this plasmodial layer is necessary before passage is effected from the maternal sinuses to the stroma. Birch-Hirschfeld, Schmorl and Kockel have found tubercle bacilli in the placenta, in fetal placenta villi and in the fetus removed by Cæsarean section from tuberculous mothers.

In conclusion, I would sum up the salient features of the subject as follows:

1. Genital tuberculosis, while most frequent during the active period of life, may occur at any age from ten weeks to eighty-three years.

2. The disease occurs more frequently than is generally supposed. Williams claims that about eight per cent. of appendages removed by him for inflammatory disease are tuberculous.

3. A diagnosis is frequently impossible without microscopic examination. In doubtful cases the demonstration of a few tubercle bacilli in discharges is not sufficient—the association of giant cells is, however, conclusive evidence.

4. It is usually secondary to manifestations of tuberculosis in other parts of the body, but undoubtedly occurs in a considerable number of cases primarily in the genitals.

5. The importance of early diagnosis is increased from uniformly good results of early operation when the disease is primary.

6. All portions may be involved, and the Fallopian tubes are affected in almost all cases.

7. The order of frequency of involvement is as follows: tubes, uterus, ovaries, vagina, cervix and vulva.

MARASMUS.

BY ANNA JOHNSTON, M. D.

Marasmus is a term that is used somewhat indiscriminately. Other synonyms are infantile atrophy, athrepsia and wasting disease of childhood.

It usually occurs during the first six months of childhood, but may develop much later. Unless we can get the family history, it is difficult at times to differentiate this disease from tuberculosis or syphilis, as often the cause is very obscure.

The pathology does not throw much light upon it. Atrophy being about the only condition found primarily, later secondary conditions frequently exist, such as fatty liver, fatty degeneration of heart and kidneys; thrombosis in kidneys, lungs and brain; broncho-pneumonia, bronchitis and intestinal catarrh.

The most important symptoms of this disease are gradual emaciation, skin dry, harsh and wrinkled, pulse rapid and feeble; there may be some fever, especially if there is a tubercular diathesis, but usually the temperature is normal or sub-normal. Urine scanty, acrid; bowels may be normal or nearly so; occasionally diarrhea and constipation are in alternation, but this condition is oftener an earlier symptom than a later one.

As to the prognosis, if the case is not tubercular we have a fair chance of success; much better than our friends of the "Old School."

One of their authors says, in speaking of the treatment of this disease, that it is purely dietetic. Another says the treatment is essentially by such modification of the milk as to promote intestinal absorption, and without drugs.

When we contrast the treatment of our school, we should be rejoiced to know that we do use drugs, thereby succeeding where otherwise we would have failed. While not losing sight of the dietary and hygienic treatment, which are of prime importance, I again affirm that our cure also depends much upon the careful selection of the indicated remedy.

With this brief consideration of this subject I wish to report three cases of marasmus which I have treated, each of which had been under the care of the other school, and the last

two had been given up. They had done everything, even to the administering of that last remedy which is always held in reserve for extreme cases.

Case I. James N., æt. nine months, weighed seven pounds. The atrophy was probably the result of tonsilitis followed by an abscess in the groin.

The child lay on his back, seemingly semi-conscious, sleepless, pulse very weak and rapid, temperature slightly elevated, urine scanty, bowels moved frequently, stools very thin, greenish, anus and nates excoriated, eyelids inflamed, mouth ulcerated. No indication of teeth as yet. Night sweats, a little hacking cough, some crepitant râles were found in chest. Arsenicum iodide was prescribed, later chanomilla and finally calcarea phos. was used to finish the case. As the hygienic surroundings were of the best there remained nothing to be corrected along that line. For nourishment we gave him cow's milk, modified with Fairchild's peptogenic milk powder. With each feeding five drops of bovine were given. Olive oil inunctions morning and evening were administered. In about four weeks I discharged the case. By this time he was able to sit alone; before, he could not even hold up his head. The family then went to the country for the summer, it being about the middle of June. When they returned in September he had several teeth and seemed quite healthy.

Case II. Samuel C., æt. fourteen months, greatly emaciated, carried him around on a pillow, pulse so weak it was difficult to count, temperature subnormal. Vomiting after each attempt to eat; yet appetite voracious. Abdomen greatly distended, bowels moving almost constantly, stools greenish, slimy and bloody. Merc. cor. corrected bowel trouble very quickly, but broncho-pneumonia set in about that time. It seemed for a few days that we would surely lose him, but fer. phos., followed by tartar emetic, cleared away that trouble, and the little fellow made a rapid recovery.

Case III. Mary R., æt. five months. Had been ill for several weeks, during the last three of which had been receiving daily visits from their physician. He had tried all sorts of foods, broths and gruels, but to no avail.

At last he said all had been done, the baby could not live. The family were in despair; growing reckless they decided to try homeopathy, not that they had any faith in it, but to satisfy a sister who had.

By this time the child was too weak to cry, but whined night and day. Never slept, was ravenously hungry, but whenever it was fed the bowels moved.

Emaciation was very great, extremities cold, pulse weak and rapid, in fact it looked as if it was dying. Arsenicum was the

remedy given. One hour after the first dose was administered, circulation improved, hands and feet were warm.

The grandmother still maintains that that remedy worked a miracle.

The only other remedy used was chanomilla. I also used cow's milk in the case, modified with the peptogenic milk powder.

The baby made a speedy and uneventful recovery.

In treating these cases, don't forget the psora—there may be some taint that sulphur, psorinum, medorrhinum or some other anti-psoric remedy is needed to wash off the slate before your indicated remedy will do its work.



SURGICAL CASES.

BY H. L. MAITLAND, M. D.

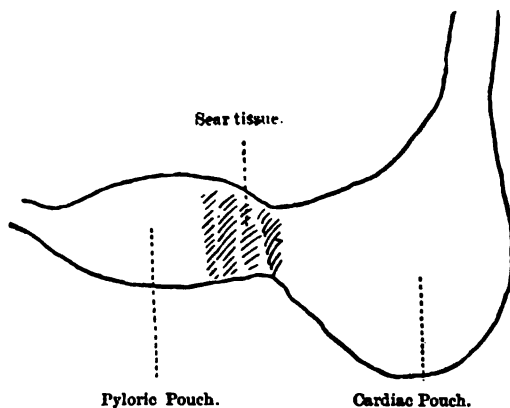
Whitehead Operation for Suppuration in the Knee-joint.—A male, aged twenty-eight, was admitted to the hospital with a history that fourteen days previously he had, while at sea, fallen on a chisel, which had cut his right knee. The knee-joint was distended with pus, some escaping through a small punctured wound; the surrounding tissues were swollen and edematous; and there were marked constitutional symptoms of sepsis. The pathological report was that the infection was streptococcal.

The operation as suggested by Whitehead was done. A transverse incision was made right across the front of knee-joint, leaving the tissues containing the nerves and vessels (the posterior surface) intact. The patella was sawn through, the leg was then bent to its fullest extent, thus completely opening the joint, which was then packed with gauze, which was frequently changed, and was so dressed for thirteen days, when the joint surfaces became covered with granulation tissue and the acute symptoms had disappeared. The leg was then straightened and put on a back splint, the lower half of the patella being removed; the upper fragment was covered with granulation tissue and was left. The patient made a good recovery, but, of course, with a stiff leg.

Everyone is aware of the difficulty of draining the knee-joint when it is acutely suppurating. The usual custom of opening the knee-joint on either side of the patella is not sufficient. Effective drainage can be obtained by making an incision along the anterior border of the biceps with extended knee down to

the capsule. Then flexing the knee, which allows the biceps to be pulled back out of the way, the ilio-tibial band is then incised and the capsule of the joint opened above or below the popliteus tendon—below the tendon preferably, because the incision opens into the pocket below the muscle, which is the lowest position in the joint cavity. But even with this incision, the joint only drains well if the joint is flexed. This posterior incision I have used in conjunction with an anterior one, but the result was not satisfactory. The cardinal rule in the treatment of septic wounds, to well open and well drain, is better fulfilled by adopting Whitehead's suggestions.

Hourglass Contraction of the Stomach.—Mrs. A., aged forty-two, anemic and emaciated, complained of progressive loss of flesh during the previous three years, vomiting, and constant epigastric pain, more marked after meals. She had been unable to take solid food, and during the last six months



had suffered with constipation. Ten years previously had vomited blood on two occasions, and again six years ago.

An examination of a test meal by Dr. Corlette showed free HCl. An exploratory laparotomy was done and revealed a well-marked hourglass contraction of the stomach; the constriction, which only admitted two fingers, being due to scar tissue in the stomach wall, and extended from the lesser curvature on the anterior surface to half way up the posterior surface of the stomach. The cardiac pouch was about double the size of the pyloric.

A posterior anastomosis between the cardiac pouch and the jejunum was done by suture, using two layers; a through-and-through catgut hemostatic layer and a serous silk Cushing

suture being used. The interior of the stomach wall was examined through the gastric opening and an old healed ulcer on the anterior wall was seen. Several clippings from the stomach wall were taken, which the pathologist reported as not malignant. The patient made a rapid recovery and put on twenty-eight pounds in weight in a few months. She still (seventeen months after the operation) has occasional epigastric pain after solid food, but not sufficient to cause any great inconvenience.

I do not intend to go into the etiology and symptoms of hourglass contraction of the stomach, but just one brief word with regard to the choice of operation. This must be determined by the conditions met with in each case.

Gastro-anastomosis is contra-indicated (1) when either or both pouches are very small, (2) if scar tissue is very extensive, (3) if the anastomosis will cause a bending of the pylorus. Gastro-plasty is inapplicable in the presence of extensive cicatricial tissue. Resection of the constriction, of course, would only be considered in the simplest of cases. The objection to gastro-enterostomy is the possibility of stasis of ingesta in the pyloric pouch.

Gastro-jejunostomy was done in this case because of the extent of the cicatricial tissue and the relatively small size of the pyloric pouch.

Since doing this case I have had another in which a very similar condition existed. In this case I also did a gastro-jejunostomy, using a Murphy's button, as the patient's general condition was bad. She also did very well, but did not pass the button till four months after the operation.

A Case illustrative of the Operative Method of Replacing the Head of the Bone in the Glenoid Cavity in Old Unreduced Dislocation of the Shoulder.—A male adult, aged forty-eight, was admitted into Sydney Hospital with an unreduced sub-coracoid dislocation of the right shoulder-joint. Three months previous to admission the patient had been injured at sea. Attempts at reduction had been made by the captain of the vessel. On admission the arm was practically useless, edematous, and painful from pressure on the axillary vessels and nerve trunks. Under an anesthetic I was unable to reduce the dislocation by careful manipulation by Kocher's method, and by traction in the long axis and at right angles to the trunk, with the scapula fixed. A curved incision was made from the coracoid process, downwards and backwards over the insertion of the deltoid, the flap dissected up, the pectoralis major drawn inwards, and the head of the humerus exposed, the fibrous tissues around the anatomical neck divided and detached by an elevator. The glenoid cavity, which was filled with fibrous tissue, was cleared out to its normal depth, the

supra- and infra- spinati attached to the greater tuberosity were partially divided (the subscapularis did not require dividing), the head of the bone was then replaced, the wound closed, and arm fixed. Passive movement was begun in a week, when the wound had healed, and was daily practiced.

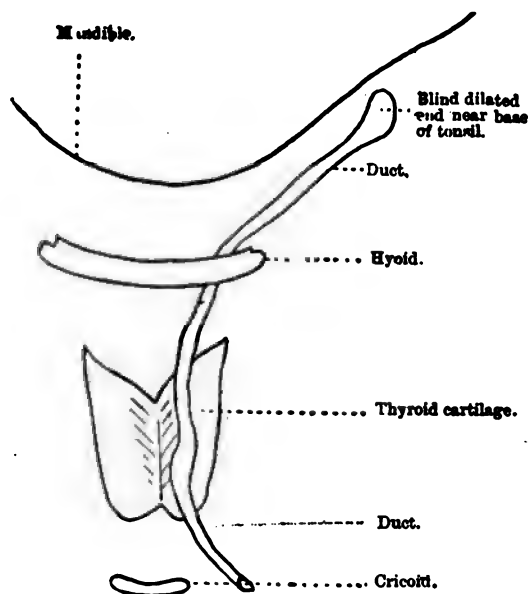
The difficulties of reducing old dislocations are known to every surgeon. They are due to (1) Changes in the capsule of the joint; (2) the filling up of the glenoid cavity with fibrous tissue; (3) adhesion of the head of the bone in its abnormal position to surrounding structures; (4) to shortening of the infra- and supra- spinati muscles, the teres minor, and the subscapularis; (5) the shape of the glenoid cavity itself, the lower and inner margin of the cavity being stronger and more prominent. This prominence is Nature's attempt to fortify the weak part of the joint, the capsule between the subscapularis and the long head of the triceps being unprotected. Added to these difficulties is the danger of rupturing the axillary vessels, which, from their anatomical position, may be adherent to the head of the bone.

I think that this open method of reduction of old unreduced dislocations will become more popular now that asepsis is better understood. Watson Cheyne has laid it down as a rule that it is not advisable to attempt by manipulation the reduction of a subcoracoid or subglenoid dislocation after four or five weeks have elapsed from the time of the injury, and that it is practically unjustifiable to attempt it after seven weeks. I think that in the main most surgeons will agree with this dictum. A year after the operation the patient wrote to say that he had almost perfect use of his arm, but had some difficulty in moving the arm above the level of his shoulder.

Persistent Thyro-Lingual Duct.—A male child aged fifteen months. *Previous history.*—When the child was twelve years a lump about the size of a marble appeared on the side of the neck in the situation of the sinus, which was near the anterior border of the left sterno-mastoid muscle, about half an inch below the level of the cricoid cartilage. This swelling increased in size, and had been "opened and scraped." The wound had never closed, and had continued to discharge ever since. It had been scraped, under an anesthetic, on three occasions.

When the child was admitted into the Sydney Hospital there was a sinus in the center of a small ulcer in the situation I have indicated. It discharged a blood-stained, glairy fluid. Over the left wing of the thyroid cartilage was a distinct nodule

about the size of a large pea. This, on pressure, disappeared almost entirely, and there was a corresponding discharge from the fistula. A probe could not be passed in. That it was a persistent thyro-lingual duct was suspected.



Under an anesthetic I followed up the fistulous tract, and found that it extended up towards the middle line, over the thyroid cartilage, and then dipped beneath the hyoid bone, the left cornua of which I had to excise. It then extended upwards, dipping deeply beneath the muscles forming the floor of the mouth, and ended near the base of the left tonsil. The whole of the fistulous tract was excised. This was difficult, because it would only in parts admit a filiform bougie, and was situated deeply in the neck, and necessitated an extensive dissection. The wound healed, with no recurrence of the fistula.

The formation of these rare fistulæ is, we know, easily explainable on embryological grounds. The first cleft between the first and second branchial arches forms the auditory canal, and, therefore, can never form a branchial cleft. The second cleft, between the second and third branchial arches, has its inner opening in the region of the tonsil, and it was a persistence of this cleft that formed the fistula. This second cleft, or thyro-lingual duct, may also give rise to congenital cysts.

The only treatment to adopt in such a case as I record is

complete excision of the fistulous tract, as was done in this case.

Three Unusual Cases of Appendicitis.—Every surgeon is familiar with the fact that the appendix may be met with in any position in the abdominal cavity, from the liver to the pelvic floor, and that these abnormal positions are due to two causes, viz.: (1) an abnormally long meso-appendix, (2) an arrest in the fetal development. In the first and second cases I record, in which the appendix was attached to the gall-bladder and to the kidney, there was incomplete descent of the cecum. The appendix attached to the gall-bladder also had a long meso-appendix; that attached to the kidney was retro-colonic, and, as is frequently the case when found in such a situation, had no mesentery. In the third case the abnormal position was due to an abnormally long meso-appendix. When one considers that an appendix found in the positions I mention under normal conditions is uncommon, and when one takes into further consideration that only a percentage of such appendices become diseased, the comparative rarity of the three cases I record will be appreciated.

Case 1.—Appendicitis Simulating Blockage of Common Duct by Gallstones.—A female, aged twenty-seven, had three attacks of pain over region of gall-bladder during the previous year. When first seen the patient complained of acute and very severe pain over the region of the gall-bladder. She was jaundiced, high temperature, rigors, and a mass could be felt in the region of the gall-bladder. A diagnosis of acute suppurative cholangitis was made, and immediate operation decided upon. Upon opening the abdomen, the trouble was found to be due to an extremely long appendix, which was attached to a distended gall-bladder by the tip, which had ruptured and formed an abscess. The appendix was removed, and the gall-bladder opened and drained. The gall-bladder had become infected by extension, the inflammatory process extending to the common duct, through the gall-bladder and cystic duct, and blocking the common duct. The gall-bladder was distended with muco-pus. The recovery was uneventful but protracted.

The clinical history presented by this case is that of one of gallstones with secondary infective cholangitis and it was impossible to arrive at a correct diagnosis from the symptoms.

Case 2.—Appendicitis Simulating Renal Calculus.—A female, aged twenty-seven, was admitted into Sydney Hospital with the following history. She complained of pain in the

right side which came on suddenly six days previously. The pain was severe. She had vomited at the time. She passed, per urethram, almost pure blood about ten hours after the advent of the pain. Had never passed blood before, but had had two similar attacks of pain—one about three months, and another seven months before the present attack.

On admission she had marked tenderness over the lower pole of the right kidney and in front. The urine contained a macroscopic amount of blood. There was no temperature. An X-ray picture gave a negative result. On cutting down on the right kidney a retro-colic appendix acutely inflamed was found in a mass of inflammatory material attached to the lower pole of the right kidney. The loin incision had to be enlarged forwards and the peritoneal cavity opened before the appendix could be removed. The ureter was involved in the mass, and was carefully freed on its outer aspect. The patient made an uninterrupted recovery.

The history of this case is a typical one of renal calculus. The pain, its situation, its onset, its character, resemble that of renal calculus. The hematuria, due no doubt to the extension of the inflammation from the appendix to the kidney, accentuated the likeness to that of renal calculus.

Case 3.—Appendicitis Simulating Strangulated Hernia.—The following case was sent to Sydney Hospital as a case of strangulated hernia.

The patient gave the following history:—He always had had a rupture on the right side, but had never worn a truss for any length of time, as it gave him too much pain. On lying down it would partially go back, but would never disappear. Three days ago he was seized with a sudden and acute pain in the hernia, which had gradually become worse. He began to vomit on the second day after being taken ill.

On admission the large tense hernia was seen. Attempts at reduction had been made previous to admission; therefore immediate operation was decided upon. On opening the sac it was found to contain small intestine, which was nipped but was easily reduced, a large quantity of adherent omentum, and at the bottom of the sac was a conical or fetal type of cecum, with an appendix coming off from the small end of the cone. The appendix was acutely inflamed and adherent to the bottom of the sac, and wrapped round with omentum and contained a large grape seed, blocking its lumen. The appendix was removed and Bassini's radical cure done. The wound healed by first intention.

Only once before have I seen a foreign body—a shot—in an appendix, and in that case also the cecum was of the conical and fetal type. The liability of a foreign body finding a resting

place in an appendix when such a type of cecum exists is easily understood. The similarity of this case to that of strangulated hernia is evident.



INFANT FEEDING.

BY CAROLINE LINCOLN GUILD, M. D.

The question of how to feed the child both in health and disease is one of vital importance. If the baby is well born, vigorous, and healthy, and if he has the good fortune to come under the care of an intelligent, painstaking mother he should not to be sick. More than two-thirds of the ills of infancy and childhood are due to the lack of proper food and proper care. This care must begin with the prenatal existence of the babe. Most expectant mothers look forward joyfully to the advent of the little one, forgetful of the trial before them in the anticipation of a beautiful, healthy child; planning already for its physical and mental development. This is normal and right.

There is no better investment to be had than that of a brainy, vigorous child, but these prospective mothers, only in rare cases, think how much they can do toward the realization of their dreams. Can good muscle, brain, and nerve tissue be evolved from only fat and heat-making elements? The Israelites complained that they could not make bricks from straw. This achievement is quite as easy as the producing of a bright, vigorous child, whose food consists almost wholly of starch and lacks the elements necessary to a strong body and brain. Not only must these things be considered after the child is in the world and when it is old enough to eat ordinary food, but when life is still in utero it should have the same faithful, intelligent care. An expectant mother should see that the protein compounds form a large part of her diet during gestation. These are represented in lean meats, white of egg (albumin), casein (curd) of milk, gluten of wheat and fruits. Of course she needs fats and these are obtained from meat, butter, and oil. Heat is evolved from the carbohydrates, starch and sugar. These things have their use and place.

White bread is always the favorite, but in producing its dainty coloring and texture the greater part of its food value is sacrificed.

Whole wheat, graham, or rye bread should be used, cereals with cream or milk. Of these the ordinary cracked wheat is the best as affording the most nourishment and refuse, the latter being as indispensable as that part of the food which is absorbed into the blood. Oatmeal is good occasionally as a change; the sharp bits of hull always contained in it are a serious objection to constant use. Both these grains require long cooking which some housekeepers find impossible, especially where an early meal is necessary. The prepared foods which can be cooked in a few minutes lose much of their value in the process. The best of these is the Shredded Wheat biscuit, which is palatable and contains the elements best adapted to brain and muscle development. Many years' experience has taught me that the expectant mother cannot be too careful in following these directions, both for the benefit of her child and for her own comfort.

The simple breakfast is always best: a cereal with fruit; eggs occasionally if desired. I would not advise the daily use of eggs and they should always be lightly cooked; the process of steaming produces the best and most healthful results. Eggs are steamed by being put into a saucepan having a close cover. Pour boiling water over them, cover tightly, and allow them to stand exactly nine minutes on the back of the stove where the water cannot possibly boil.

Meat once a day is desirable; when taken oftener it is likely to do mischief, not readily assimilating and leaving effete matter in the system which is productive of headaches, dizziness, stupor. Beef, mutton, and poultry are good. Veal or pork in any form should be avoided. The vegetables that grow above the ground and almost all fruits can be used freely. Apples and peaches baked, also the best quality of dried fruits, tend to keep the bowels in good condition. Few people cook dried fruits properly. I venture to give my own way. After washing the fruit thoroughly put it into plenty of cold water and let it stand from twelve to twenty-four hours, till the fruit has absorbed all the water possible and is nearly as plump as when fresh. Prepare a clear syrup of granulated sugar of the desired sweetness. Turn this, while boiling, over the fruit, the water in which it was soaked having been turned off and discarded. When cold you will find a dish as dainty and delicious as that made from the fresh fruit.

The most important factor of good diet at all times, and especially during gestation, is the proper drinking of cold water. The sewers of the body need flushing as much as do the sewers of the town. Water is the only real solvent. It should not be taken with the meals but a half an hour before or two hours after.

Happy is the mother and fortunate the baby who is able to follow Nature's own law in feeding. Whenever it is possible the mother should nurse her child. I have great respect for the physician who insists upon this point and would rather give up a good paying case rather than allow the fashionable young mother to substitute a wet nurse or the bottle for the food she is well able to provide from her own breast. In case of the presence of chronic diseases such as syphilis, tuberculosis, or any one of the kidney complications the mother's milk should not be used. Sometimes the supply is insufficient; no disease is present but the child does not do well. In such cases the mother's milk should be subjected to a competent examination; generally it will be found wanting in essential qualities and is unfit for use. Again a woman may be healthy and vigorous, yet there is little or no lactal secretion; every effort to induce it fails in all cases, so artificial feeding must be substituted. Numberless preparations for such an emergency are to be had, many of them good and often giving fine results but a safe and valuable substitute for the mother's milk is fresh, pure cow's milk with the modifications indicated by the condition of the child. The composition of cow's milk differs materially from that of the mother's milk. As stated by an authority, "In human milk the proteins consist of lactalbumin and casein in the proportion of two-thirds of the former to one-third of the latter. In cow's milk one-sixth of the protein is lactalbumin and the rest casein. The total protein of human milk is precipitated in fine flakes; that of cow's milk in heavy curds. The amount of protein is 1.5 to 2 per cent. in human milk, 3 to 5 per cent. in cow's milk as an average." Hence the necessity of adding lime-water, barley, or oatmeal gruel to the cow's milk. In thus diluting the milk the proportion of sugar is reduced and must be made up. Milk sugar is naturally most desirable, being normally present in the mother's milk. Cane sugar has its advocates among prominent physicians. It is much sweeter than milk sugar, so a smaller amount is required. My own habit is to use equal parts of cane and milk sugar.

After years of experience in private practice and a connection with an institution where infants from a few weeks old up are cared for, I have come to the conclusion that the best results in infant feeding are obtained from the use of the *Estrus Materna Graduate*. The apparatus, really too well known to need description, consists of a closed jar with a lip, seven panels, and a capacity of 16 ounces. One panel giving the ordinary ounce graduation, the other six as many different formulas for modifying the cow's milk, each adapted to the growth of the baby. For the first months of life only milk, cream, lime-water, and water with sugar of milk should be used. By the fifth month barley or oatmeal gruel takes the place of the water, granulated sugar can be used with the milk sugar, equal parts. After the ninth month granulated sugar can be used alone. It is not possible to always follow the exact formula in passing from one step to another in the *Materna Graduate*. The child's condition must be carefully considered, especially as shown in the excreta. A little less gruel for a time perhaps, a little more or less lime-water; of the latter use always the minimum quantity. Where the little one does not seem up to its best in weight and vitality a little more barley or oatmeal gruel should be used. If vomiting, colic, or great restlessness follows the feeding the gruel should be less and the lime-water slightly increased. A curdled stool is often rectified by the modifications of these ingredients. Barley or oatmeal gruel may be alternated as a change if the baby is doing well. A constipated stool calls for oatmeal, a very loose stool or actual diarrhea may be soon rectified by substituting a gruel of rice flakes and boiling the milk for five minutes. This should be abandoned at once upon the return to normal conditions. In preparing the food select the milk carefully, using only a dairy that can show perfect sanitary methods. Use only bottled milk unless the milk can be obtained directly from the cow, then the greatest care and most scrupulous cleanliness must be used in transportation. All water should be boiled for forty minutes before using.

In preparing barley gruel, take one tablespoonful of pearl barley, cover with cold water and soak several hours, add to this a pint of water, a little salt, and boil four or five hours, adding more water when necessary, strain through muslin. When done this should be a clear, thin jelly. The barley flour

is more quickly prepared as follows: take a heaped tablespoonful of barley flour, smoothed into a paste with cold water, stir into this a pint of boiling water which has been salted; this will cook in about fifteen minutes in a saucepan; a little more time is required if the double boiler is used, which is better than a saucepan, as there is no possibility of burning. Oatmeal is prepared in the same way, a tablespoonful of the grain to a pint of boiling water to which a little salt has been added; it should be cooked for at least two hours and strained. All grains cooked in this way should be stirred constantly until well cooked and then at frequent intervals until thick enough to use. A little more water can be added if necessary.

Too much care cannot be used with the baby's feeding bottle; the brushes for cleaning and the vessels for boiling the bottles should be kept strictly for this purpose. The bottles should be those used exclusively for feeding, perfectly smooth inside, round, with no corners or rough places, two or three should always be kept in use; they should be emptied and thoroughly sterilized after each feeding. This is accomplished by placing the bottle in cold water, bringing it up to the boiling point and allowing it to remain for twenty minutes. While waiting for use the bottle should be kept full of a weak solution of boric acid or sodium bicarbonate (a teaspoonful of either to a pint of water). Sterile water should always be kept on hand for rinsing the bottles just before using. Water is sterilized by being kept at the boiling point forty minutes. It should be freshly prepared every twenty-four hours.

Several short black rubber nipples should be kept on hand; these should be cleansed by turning inside out, kept when not in use in the boric solution and rinsed in sterile water before using. No tube of any kind should be used in the feeding bottle. It is a good plan to prepare the food for the day according to the formula in use, to thoroughly clean the bottles, fill them, place them in a vessel of cold water, and bring them up to 170°; fill the mouth of the bottle with absorbent cotton, put away in a cold, well-aired place. When required for use these can be again placed in cold water and brought to blood heat; 98° to 99°.

When the child has completed its ninth month, if he is in a normal condition the night feeding should be dropped; a bottle given when the mother retires and not again before five or six

o'clock in the morning. If the baby wakens and cries for his bottle, which he is quite likely to do for a night or two, give him a teaspoonful of water. He will soon quietly go to sleep and after a few nights will not waken at all till morning.

It is to the distinct advantage of the child that he should not have the night feeding after he is nine months old, and if he is very robust it can be dropped earlier. A teaspoonful of cold water should be given to the child occasionally through the day after the first few weeks of life. At ten months a tablespoonful of meat broth, increased as he grows older, can be added to the diet. Beef, mutton, and chicken alternated. The broth should always be prepared the day before using, every particle of fat being eliminated. Milk should continue the chief element in the child's diet for the first five years; at least a quart daily after second year. Since the secretive glands of the digestive apparatus develop synchronously with the teeth the fibrin of meat and starches are not properly prepared for assimilation till the teeth are fully developed, hence these elements in the food should be avoided. Additions to the diet can be made after the twelfth or fifteenth month: wheat, barley, farina, arrowroot jellied or made into porridge and given with milk and cream; a soft-boiled egg and stale bread crumbs of graham or whole wheat; the crusts of bread or graham crackers given dry; the juices of mild, ripe fruits. The habit of giving a little child potatoes or potatoes with gravy is dangerous. The bad effect of such food is not immediately apparent, but it is often the cause of future ills.

In the second or third year in addition to milk, gruels, and junket, plain rice, custard, or tapioca pudding can be given. Apples and peaches well baked and some of the simple vegetables such as peas, asparagus tops, and macaroni, all thoroughly cooked, can be used not too frequently.

This is the time for establishing good habits in eating. Teach your baby to eat slowly, to masticate thoroughly even his porridge and soft pudding, and to drink milk a swallow at a time. If you can keep your child to this habit until it becomes second nature, then—other things being equal—you will secure for your grown son or daughter a fine digestion, freedom from the misery of dyspepsia, the best foundation of happiness and success in life.

NOTES ON SOME CASES OF HEMORRHAGE.*

BY A. MIDGLEY CASH, M. D.

These notes were made of clinical cases in which have occurred in my practice, and they serve to illustrate some of the commoner forms in which hemorrhage is apt to occur externally.

HEMORRHAGE FROM VARICOSE VEIN IN LEG.

No. I.—Mrs. N., æt. thirty, sent hurriedly one evening about eleven o'clock. She had suffered for some time from enlarged veins in her legs. On that day she had walked a longish distance. Just as she was retiring for the night a rupture suddenly occurred in the vein, which began to bleed furiously. I got to her as quickly as possible, and found pools of blood in the passage and bedroom. The friends had surrounded the leg with bandages, which were soaked with blood, and entirely inefficacious in controlling the bleeding. Removing them, I found a round opening in the skin at the lower third of the tibia, whence the blood was issuing in jets. Raising the foot and leg, as usually advised, did not check the bleeding, so I compressed the vessel against the bone, when the hemorrhage stopped, and then put on the spot a firmly rolled pledget of absorbent wool soaked in hamamelis, with a good handful of wool outside it, and bandaged all firmly on. This satisfactorily controlled all bleeding; she was put to bed with the leg raised. Next morning, on going round early to see her, I found she had already been up and washed and dressed several children! Fortunately no harm was done. She was ordered hamamelis internally, with rest and care, for she had several threatening-looking spots on the leg. Both legs were varicose, and some of the dilated veins were dangerously near the surface. Two days later I removed the bandage, and found all right. At the spot was a fine healing sore. She was now going about her housework as usual, so I put on the bandage again to support the veins meanwhile, and ordered her an elastic stocking. Five or six weeks later she came down to see me at the dispensary, and there had been no further bleeding. Raising the leg as recommended in the text-books on surgery may be efficient and sufficient in some cases to check the bleeding, when moderate in amount; and coming only from the distal end of the vein. But when severe, and flowing also from the proximal end, as in long-standing cases where the valves have become inoperative

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owing to the dilatation of the veins, firm pressure applied directly to the bleeding spot is necessary to staunch the flow.

POST-PARTUM HEMORRHAGE FOLLOWING MISCARRIAGE.

No. II.—Mrs. E., æt. thirty-eight, strong, healthy woman, the mother of twelve children. Has had two miscarriages in the last fourteen months, probably owing to over-exertion. On January 19, 1904, she aborted again, having had no catamenia for three months. Some solid matters were described as passed, but it was not proved that the placenta came clear away. However, the os uteri was closed when I saw her. She was kept in bed under observation. Within a few days she began to pass clots, the discharge then lessened, and became watery, and looked as if passing naturally away. However, two weeks after the miscarriage, while lying quietly in bed, a tremendous gush of uterine hemorrhage occurred, which swamped the bed, and left her faint and pallid. I was sent for at once. On examination the os was found widely dilated, and the womb relaxed, and full of clot. Reaching as high as possible I could just touch a firm body, like the edge of the placenta, partly separated, and in part adhering to the wall of the uterus. She was calm, but pale and collapsed, pulse hardly to be felt. I injected 1-140 gr. ergotinine subcutaneously, and gave a hot saline injection into the rectum, which seemed to do good. I sent for the nearest doctor, who kindly came at once and put the patient under the anesthetic mixture A. C. E.

When unconscious I gradually insinuated my hand like a cone into the uterine cavity, slowly dilated it, and then got hold of the placenta, which I gently scraped and peeled away, removing it in four pieces. The uterus then contracted well. An intra-uterine douche, temperature 115°, of kreoline and water was given, and then per orem a dose of liquor ergotæ. As she seemed low I gave her 1-60 gr. strychnine hypodermically. She then rallied well, and soon came round; drank milk and bovril, and three hours later I found her quite comfortable. Later on, china and crocus were ordered alternately every two hours, and a warm injection of permanganate of potash in water given daily. There was no fever, and she made uninterrupted convalescence.

It is surprising how much blood a woman may lose in this way, and yet recover without any after anemia. The hot saline injection markedly benefited this case, for the patient seemed to recover almost at once from her serious state of collapse. Probably the use of the hot fluid in its immediate neighborhood has a good effect in increasing the contractile power of

the uterus, besides the reviving effect it produces on the circulation.

ALVEOLAR HEMORRHAGE IN A SUBJECT OF RENAL DISEASE.

No. III.—Mrs. S., æt. fifty, a stout anemic lady suffering from Bright's disease of the chronic inflammatory form. The urine was albuminous. Heart dilated and hypertrophied. Eyelids puffy, feet and legs edematous, and commencing atrophy in both optic disks. Her state was one of mild uremia, with congestive headaches. She came twice to Torquay, for her first stay was attended with decided benefit. On her second visit she unfortunately got into a large cold house, and coming in at the end of a long journey took a severe chill. She developed at once an exceedingly painful sore throat—the pain so acute that tears came into her eyes whenever she swallowed, and she exerted her utmost to avoid coughing. These symptoms were relieved by hepar. sulph. and lachesis. *Pari passu* with these symptoms hemorrhage began from the gums. At first it was a general oozing which came from the lower jaw, around some stumps, but it soon increased to alarming dimensions. Hamamelis and arnica were tried, but the matter of the throat was at this time so urgent that treatment had to be diverted to it. On the third night after it had first shown, a most severe hemorrhage occurred from the gums, and again in the afternoon following. Arnica, internally and locally, failed to stop it. When I saw her at 4 P. M. I found her mouth constantly filling with blood, which as fast as she spat out re-filled.

In the course of the afternoon she had probably lost altogether one pint of blood in this way. The gums were extremely soft and spongy. I cleared the clot out from the mouth, and found the blood welling up around a lower bicuspid and adjacent teeth. Small sponges soaked in hamam. tinct. pressed firmly on the gums did not check the bleeding, and finally I plugged lint firmly between and around the teeth, thereafter keeping the mouth firmly bandaged close. By this means the bleeding was arrested. Iced drinks with beef tea were given at intervals, and doses of hamamelis ϕ . Not before three days was it safe entirely to remove the plugs. After this no further bleeding occurred. She went on for a time, but her advanced kidney disease with increasing weakness carried her off after her return home to the north two months later. This hemorrhage was idiopathic, and occurred spontaneously; it was due to the advanced kidney disease, and consequent blood deterioration from which this lady suffered. We know that in advanced Bright's disease this is frequently the case, and hemorrhages are likely to occur from mucous surfaces, which are particularly persistent and difficult to stop.

I have at times met with sharp hemorrhage from the socket of a tooth after extraction, when it has been necessary to plug, so as to control the flow. This is comparatively easily done, where we have the hollow socket to fill up with the plugging material. But it is another matter when the bleeding proceeds from the gums at the base of existing teeth; here there is much less purchase for plugging, and the soft parts around do not give any satisfactory support.

Current Comment.

B. G. Thomas, M. D.:

I have been in practice since 1866, and have seen in a large midwifery practice many cases of *puerperal eclampsia* in my own practice and in consultation. I have followed one system of treatment, namely:

- (a) Chloroformization.
- (b) Speedy delivery.

(a) I have not given a whiff; I have kept the patient for hours under chloroform. In some of the consultation cases the medical attendant had previous to my arrival kept the patient for some time under chloroform.

(b) Under chloroform the os usually dilates or is dilatable, and I have been able to introduce a dilator. I have only used one kind—namely, Barnes's. Bossi's instrument I have never used, and it appears to me very dangerous for this purpose.

I always assume that the object is to save the mother and not simply deliver her. Delivery might be made a very simple measure by simply slipping in a bistoury and dividing the cervix, but what of the patient afterwards? The "doing of something," I quite agree with your leading article, may satisfy the patient's friends, but the doing of something without some definite object in view seems to be very poor midwifery practice.

When one has followed a uniform practice for so many years as I have, it may be possible to draw some deductions therefrom. In spite of the numerous suggestions made,

through all these years I have seen no reason to change my practice. I hold it to be a good, sound principle of medical practice that when you have a line of treatment which secures you a fair amount of recoveries it is wise to adhere to that line.

All cases of eclampsia I have seen have been associated with albuminuria. Speedy delivery has not put an end at once to the eclamptic condition, convulsions have continued for a time, and a slow convalescence has followed.

Fortunately for us eclampsia is not a common complication; if it were, midwifery would be even more exhausting than it is. When it occurs it is most alarming to patient's friends; in country practice certainly the relatives would not be content with Dr. Matthew Duncan's advice "to do nothing." A midwifery practice could not be built on such lines. The administration of enemas to clear out the bowels does always impress the relatives, and after thorough aseptic treatment of the vagina, when chloroform is taken in hand and administered, the alarm of the patient's friends is appeased, a feeling of confidence is established and this rational doing of something is a good prelude to the next step.



Everett S. Hicks, M. D.:

In this résumé of *two hundred obstetrical cases* it is my object to show that the country cases fare far better than we who are in touch with the very varying conditions would expect.

I. Presentations:

O. L. A.....	180, or 90 per cent.
O. L. P.....	5, or 2½ "
O. D. A.....	10, or 5 "
Breech.....	2, or 1 "
Shoulder.....	2, or 1 "

II. Perineal tears: 14 cases, or 7 per cent.; of these eight were forceps cases, six were not.

III. Dry births: three cases.

IV. Anesthetic used in about 180 cases.

V. Instrumental cases: 37.

VI. Mortality: (a) Maternal, one case, eclampsia; (b) infant, six cases, or 3 per cent. These six cases are all infants not living two days after birth:

Reason of Death.	Born.
1. Occiput-posterior position and necessary manipulations	Dead.
2. Difficult forceps case—probably pressure.....	Lived one day.
3. Hydrocephalus—perforation	Dead.
4. Eight and a half months' infant—heart deficiency..	Lived one day.
5. Eclamptic convulsions of mother—induced labor...	Dead.
6. Contracted pelvis—craniotomy.....	Dead.

VII. Anomalies as regards mother: One patient had a double uterus. One uterus only was pregnant. After the expression of the placenta, the uterus itself felt as though terraced, and I introduced my hand, thinking that possibly all the uterine contents were not away. A double uterus was my diagnosis then, and subsequent examination confirmed this opinion. One uterus was in front of the other, not side by side. Another patient had an extreme pelvic deformity. The sacral promontory was very prominent, jutting out into and blocking the left half of the pelvis. The long forceps with axis traction hooks were of no use, and a craniotomy with removal of skull in pieces was required. The body was delivered with the hand alone.

VIII. Regarding children: One case of hydrocephalus. Two children had gonorrheal ophthalmia, both recovering nicely. One case had congenital heart disease. About 60 per cent. had jaundice.

IX. *Re* amniotic fluid: Three cases were true dry births. In one case with an otherwise uneventful confinement, the water broken on Tuesday morning, and pains came on the following Sunday night. In a number of cases six or eight hours elapsed between the escape of liquor amnii and the onset of pains. Three cases of hydramnios were met with.

Regarding technique, I may say that every means is taken to have cleanliness paramount. For the hands I use scrubbing with ordinary soap, followed by Parke Davis' germicidal soap. In many of the manipulations I use sterilized towels, thus keeping my hands in fair shape and avoiding contamination of the patient. This binder I use for the first twenty-four hours only. No douches are given unless with a definite indication, such as offensive lochia or sepsis.

Of the five cases of sepsis, three I cannot explain. One case was either my fault or the nurse's, as we both came directly from a septic miscarriage case. The other case I saw in con-

sultation, a difficult occiput-posterior position. This patient I saw again three months after confinement. The uterus reached half-way to the umbilicus, and a profuse leucorrhœal discharge, of about a quart a day, poured from it. The cervix was very patulous. The patient recovered after the use of prolonged hot douches, intra-uterine, of sulphate of zinc solution. One case is worthy of special mention. A primipara in labor about six hours was not progressing rapidly enough to suit the midwife in attendance. She called on her druggist for aid, and he furnished about an ounce and a half of ergot. This was given in teaspoon doses in the next few hours with no result. The first practitioner called found the woman in severe pain, and the cervix, though undilated, so tightly stretched over the presenting head that he attempted to apply forceps, but could not do so. I saw the patient after some hours, and on close questioning was told about the ergot. We gave chloroform freely, and somewhat relieved the almost tetanic uterine pains, and allowing the cervix to dilate a little. Convulsions came on, and we delivered after a rapid dilatation of the cervix and a high forceps operation. The mother's convulsions continued for a few hours, but he eventually recovered nicely. In this connection I may say that a brother practitioner wrote me of a case he saw in which the attending physician gave ergot freely in the early stages of a labor, with the result that four doctors were called, and they decided on a Cæsarean section. While they were away from the house preparing for the operation, the baby was born in the way Providence intended.

In five cases the sharp rigors occurred with no attendant fever, but in all these patients a nervous constitution was present, with extra worry or an extra number of visitors as a cause. Albuminuria prior to confinement was met with in a number of cases, but all did well on a restricted diet. The one case of eclampsia seen was not under observation; took the convulsions in the night, and died the following day. The urine then drawn gave only a trace of albumen and a specific gravity of 1008.

In regard to the use of forceps, it has been my custom to apply them in all cases where the patient is at a standstill with cervix dilated for two hours. The relatively small mortality to mother and child I would lay to the early use of forceps. The ordinary forceps operation is not a formidable one to physi-

cian or to patient, when she is under chloroform. Chloroform is used exclusively, as ether would be useless to the country obstetrician on account of its bulk, its slowness of action, and its inflammability. In the only two cases of post-partum hemorrhage I have met, no anesthetic was used in the one case because of a hemorrhagic history, and in the other case on account of an anemia present. In noting the number of perineal tears I may say that all of any degree were hunted for and repaired at once, special attention being given to the vaginal rupture. As many tears were due to non-instrumental as to instrumental cases; in fact, I believe that chloroform and forceps prevent rather than cause tears. In one case no healing occurred. Two cases of fissure of anus were cured by sphincter dilatation and caustic, respectively. Of cervical lacerations I have no note.

♦ ♦

Balfour Marshall, M. D. :

I will relate a case of a woman admitted into the hospital with a *double ovarian tumor* associated with grave constitutional symptoms. She was thirty years old, and had been ill for eight months; after attacks of epigastric pain there was much nausea, vomiting, emaciation, and ultimately severe sweatings and frequent micturition. Abdominal swelling began a few weeks before admission, by which time it had attained the size of a six months' pregnancy. The tongue was dry and furred, the pulse 112, the lower extremities slightly edematous. One tense ovoid cyst could be defined, though after death it was found that both ovaries were affected, one cyst overlapping the other in such a manner as to make them apparently one tumor. It was clear that the general condition could not be accounted for by the tumor. The stools were fetid, but not of the typhoid fever type. The urine, after standing for some time exposed to the air, acquired a dark-brown color as in some cases of carbolic-acid poisoning. On the sixth day the patient died. There was a cyst of both ovaries, which, as well as the uterus, abdominal and thoracic viscera, was studded with countless melano-sarcomatous tumors. The left suprarenal capsule was transformed into a melanotic mass about the size of a Tangerine orange, probably the origin of the melanosis. The external surface of the body was entirely free from any growth or pigmented spot.

W. O. Henry, M. D.:

My experience with *extra-uterine pregnancy* has been carefully tabulated only for the last few years, and I have but twenty cases to report, from which there are a few lessons I would like to draw. Eleven of these cases occurred in the winter months, two in June, two in July, one in August, and one in October; the largest number—four—occurring in January. Six of these I saw in their first rupture, the others had had more than one attack. Three of these seen in the first attack were tubal abortion, and the hemorrhage was very severe. From my own observations, I would say that the shock is more profound, and the hemorrhage more severe in tubal abortion, than in rupture of the tube. One of these two years later had a tubal pregnancy on the opposite side, for which she was successfully operated on in St. Louis. Another, eighteen months later gave birth to her first child.

As to treatment, the old idea of making an early diagnosis before the rupture has taken place and then using an electric current to destroy the fetus, is practically out of date for two reasons:

First. The pregnancy is not often recognized until rupture has taken place, and something else must be done at any rate.

Second. And more particularly because an abdominal section to remove the product of conception even before rupture, would be the ideal treatment unless the case has passed the point of liability to rupture, when the pregnancy might continue to term.

Here the patient should be put under careful observation in the hospital, and as soon as spurious labor begins, the abdomen should be opened, fetus removed and saved if possible; usually too in these cases the after-birth should be removed at the same time. It is true there might be conditions which would justify packing the cavity or sac with iodoform gauze and waiting for atrophy of the blood supply, but this would be very exceptional, and the relief now, with our present technique, should be the immediate removal of the after-birth, even if packing with Mickulicz's dressing should prove to be necessary.

The other cases are those in which treatment is called for at the time of the rupture or abortion. Here there should be no delay in having the abdomen opened and the hemorrhage con-

trolled in the shortest possible time consistent with proper asepsis and preparation, for whilst we must admit that quite a percentage of these cases do not immediately prove fatal, there is no telling just when the hemorrhage will be arrested by nature, and so when the physician is called it is his business to proceed along the line of greatest safety and thus arrange for the patient to be operated upon as suggested. Of course cases that have had two or three attacks of hemorrhage without any very pronounced shock or collapse, might not so urgently demand operation. But even here the second or third rupture may prove to be the serious and fatal one. The case in which more than one rupture has occurred with slight attacks of peritonitis in which the clots have become infected and suppuration has occurred, we practically have a pelvic abscess and here a vaginal section with thorough flushing and drainage of the cavity is the ideal treatment.

As to technique, in abdominal section for acute hemorrhage after the ordinary preparation and the patient is in the hospital, or in the hands of a competent nurse to look after her, the abdomen should be opened and the clamps quickly applied next to the uterus, and the distal end of the broad ligament, thus immediately controlling all hemorrhage, when the fluid blood and the blood clots may be removed almost at leisure by careful swabbing, and the tube and its contents, usually including the ovary on that side, are removed. My own preference is to cleanse the abdomen and pelvic cavity as thoroughly as possible with the hands and with gauze swabs. I never use any flushing of the cavity. Of my own twenty cases all but two recovered. These two had been septic for some little time before operation was done. In one case the pregnancy was abdominal, the fetus had reached about the third or fourth month, it had been compressed and was mummified and retained in pelvic cavity for four or five months after its death. One case was an ovarian pregnancy.

♦ ♦

Alexander Fraser, M. D.:

I will report a case of *vagitus uterinus*. The mother, a primipara, aged twenty-five, had been in labor for a week. The membranes had ruptured before the nurse arrived. The pains were weak and infrequent, and the patient was exhausted. The

pulse was soft, small and 116. On abdominal examination the head was found to be presenting and engaged, but both ends of the head were equally accessible. The position was dorso-anterior, with the occiput to the left. The fetal pulse was 120. The vagina was small and the perineum rigid. The os was the size of a crown-piece and unyielding. The brow was presenting. Attempts to flex the head proved unsuccessful. With the patient in the genupectoral position, the attempt was repeated; but just after she assumed the position a series of plaintive cries came from the vagina. The patient recognized their source, and they were repeated until operative interference was begun. Under chloroform the cervix was manually dilated, and a foot was brought down. As there were no uterine pains, the child was delivered by intermittent traction, and after artificial respiration and injections of strychnine, was resuscitated. The time between the first cry and delivery was an hour and a half. During delivery all fresh supply of air to the child was necessarily cut off. Apparently the placental circulation was maintained by the left ventricle alone for more than three-quarters of an hour.



Reginald Dunlap, M. D.:

Although we cannot, from want of knowledge, employ a method of treatment calculated to influence the primary cause of *eclampsia*, our efforts may be so far rational that we can improve some of the morbid conditions present, which, although not the first step in the disease, tend to increase the general breakdown of the economy, resulting in epileptiform seizures. For example, the failure of the kidneys to secrete urine is not the original cause of *eclampsia*, but we know that if suppression of urine cannot be speedily relieved the patient will die, hence treatment directed to the promotion of diuresis is to some extent rational, and certainly it is scientific and will be helpful to recovery.

In Glasgow Maternity Hospital the death-rate from *eclampsia* prior to 1898 was over forty per cent.; since then it has been less than twenty-five per cent. The class of patients and the general circumstances are the same, the obstetrical treatment is practically the same, yet a great fall in the death-rate has been established, and that in a large number of cases. The

only great change in the treatment has been the introduction of saline infusion. It is not, then, unhealthy skepticism to assume that a new method, introduced for the first time just prior to the improvement in the results noted and continued ever since, has been largely instrumental in the improvement noted, and that "there is no treatment of eclampsia from which benefit can be certainly predicted."

The solution now used is 1 dram each of sodium chloride and acetate of soda to a pint of water. This solution, sterilized and at 100° F., is run into the areolar tissue beneath the breast, or after delivery, into the lax abdominal wall. The object of the treatment primarily is "to get the kidneys to act."

Analysis of the urines of eclamptics during convalescence shows a marked increase in the elimination of urea and uric acid, and probably other bodies are washed out which are even more harmful to the patient. Besides this eliminant effect saline infusion dilutes the toxins still in the blood stream, and this may be observed in other diseases—for example, diabetic coma.

There is the further benefit to the patient of the stimulation which immediately follows this treatment in collapse. This effect is of course best seen when the collapse is due to loss of blood, but even in other cases it is often marked, for at such times the disposition of the quantity of blood in the body makes the same circumstances for the heart and brain as an external hemorrhage—for example, the collapse subsequent to a lengthy operation when there has been practically no bleeding.

Infusion of saline solution may, however, be overdone. If the patient be very edematous, if there be marked cyanosis with high arterial tension and if there be much pulmonary congestion, it should be practiced only to a moderate extent (say 1 pint) unless the patient be bled at the same time. There is more than a slight risk of increasing the work of the heart by too large infusions, and the result will be, if not an immediate cardiac failure, an edema of the lungs which will be no less certainly fatal.

It is generally admitted that peripheral irritation is a bad thing in eclampsia, whether caused by uterine contractions or obstetrical operations, hence we should adopt that line of treatment which will subject the patient to least irritation. If the labor be well advanced and the os sufficiently dilated, it cannot

be thought that a forceps delivery under chloroform would be as great a source of irritation as a succession of labor pains in the second stage, becoming more frequent and forceful, and probably lasting for an hour or more. The real difficulty in deciding on the proper obstetric treatment will only arise when the convulsions have occurred before or during early labor.

Herman has shown that after delivery, in about half the cases, the fits do not cease; and he points out that the disease runs its course in less than forty-eight hours, and that in most cases where convulsions began in pregnancy or early labor a cessation of the fits would occur about the time of delivery, independently of whether the uterus were empty or not. In my 8 cases it appeared that in 1 case delivery stopped the fits, in 2 cases mitigated the severity of the fits, and in 4 cases had either no effect or a bad one. Of the other 42 cases, 2 died undelivered, 7 occurred in the puerperium; the effect of delivery on the remaining 33 is here shown:

No effect, or fits ceased three hours before delivery. . .	21.
Fits ceased at delivery, though frequent up till delivery	4.
Fits mitigated after delivery, though severe just before delivery	3.
Fits more severe and frequent after than before delivery	5.

These figures strongly support Herman's contention that delivery has no definite influence in cutting short the convulsions. But, besides the effect on the convulsions, we must consider the effect of accouchement forcé on the patient. One cannot adopt a line of treatment to benefit the fits if it is shown to be harmful to the patient. Herman found that the chances were about two per cent. better if delivery were hurried than if an expectant attitude were maintained. In my 50 cases I find the death-rates with accouchement forcé and with expectant obstetrical treatment exactly equal; but of the 7 patients in the above table, where accouchement forcé had a good effect on the convulsions, 6 died within a week from sepsis, cardiac failure, or edema of the lungs. This very strongly suggests that the good effect on the fits may have been secured at the expense of the patient, and it is sufficient to show that accouchement forcé, even when the patient is

"deeply" under chloroform, is a very severe shock to her, and an extra risk.

In these 50 cases, of the 42 which occurred before the birth of the child, only 4 were during the expulsive stage. It is important to note the difference in the two clinical types: (1) those occurring in pregnancy and early labor, and (2) those occurring during the second stage. In the first class the patient has probably been in the pre-eclamptic condition for some time, and the slight additional irritation of the first pains of labor is sufficient to determine reflexly convulsions which were already impending. In the second type the toxemia may not have been well marked, and the strong stimulus of the expulsive pains in the second stage is required to bring about the loss of balance of the cortical centers.

If such a case be immediately chloroformed and delivered by forceps she will probably have few succeeding convulsions or none, but to apply the same treatment to a patient whose labor has not begun, or is in an early stage, is adding another risk, and is not only useless but harmful treatment.

♦ ♦

A. Brothers, M. D.:

Some years ago I made extensive use of *the vaginal route in operating* on the uterus and adnexa. The main advantages of this method are: (1) The avoidance of an abdominal scar with the possibility of subsequent hernia; (2) diminished post-operative shock; (3) less abhorrence on the part of the patient and relatives. After a hundred or more of such operations I found myself unconsciously drifting more and more away until, during the past year, I find that I have resorted to vaginal section only five times.

In analyzing the reasons for deserting a route concerning which at one time I was quite enthusiastic, I find that the principal one was that most of this work necessarily depended on the sense of touch which naturally was limited in the vaginal canal. Difficulties were frequently met in dealing with adhesions and in controlling hemorrhage. The mass ligature (which is to be abhorred) had to be constantly utilized and occasionally slipped; so that, in two of these cases, the abdomen had to be quickly opened in order to check secondary hemorrhages. Besides this the field of vision was naturally

limited and complicating conditions, like the diseased appendix, were regularly ignored.

With increasing experience, on the other hand, we find that the risks of post-operative hernia, where three layers of sutures are used, are slight. The scar even can be made almost invisible by the use of the transverse incision at the upper margin of the pubic hair in appropriate cases. And as for post-operative shock, the distinction was probably more in the imagination of the operator than actually in the patient. At all events, during the past year or two, several prominent operators have been getting many of their laparotomy patients out of bed after thirty-six or forty-eight hours. Besides this we see little of real surgical shock nowadays, especially since secondary hemorrhages have been recognized to be a potent factor in its causation.

And, lastly, as to minimizing the dangers of intra-peritoneal work it is far better to make a frank statement to the patient or to her relatives as to the nature of the projected intervention than to make it seem easier because of a resort to a vaginal celiotomy. In fact, the best men in our profession feel that only by this candid course can their reputations as well as the best interests of our art be subserved. And, besides this, recent medico-legal cases have proven that in the eyes of the law, even those with the best established reputations need expect scant sympathy.

In spite of all this there is still a distinct field for vaginal work in intra-peritoneal lesions. As Professor West has recently shown, large pus tubes and ovaries resting in Douglas' pouch can be successfully treated by means of evacuation and drainage kept up for many weeks. Other indications include small ovarian cysts, diseased tubes and ovaries in which dense adhesions can be safely excluded, vagino-fixation for uterine retro-displacements, etc. Most of the conditions, however, are best reached through the abdominal wound.

♦ ♦

J. M. Frazier, M. D.:

I desire to add my efforts to those of our modern masters in emphasizing the importance of a thorough *examination and inspection after the conclusion of the third stage of labor* as a routine measure. This examination should be made with the

patient placed across the bed or up on a good table, and in a good light, and should include, not alone the perineum, but also the anterior sub-pubic sulci, post-vaginal floor and the cervix uteri.

If injuries are found, and in a majority of cases a careful inspection will reveal them, their extent and nature should be carefully noted and necessary preparation made for their repair.

What better time than the present? Our patient is necessarily condemned to a few days at least of an enforced rest in the recumbent position, and a restricted diet. Her mind is in a favorable condition to accept any suggestion of necessary operative procedure. The parts are more or less anesthetized from pressure. The edges of lacerations are certainly fresh and in a fair state for a reparative process, and if the patient has been properly prepared for labor, she is prepared for any surgical procedure, and if not, a thorough scrubbing and douching with a 1-4000 or 1-6000 bichloride solution for outside and a 1 per cent. lysol and normal salt solution for mucous membrane will render the field fairly aseptic. Needles, suture material and all necessary instruments should be sterilized at the bedside. The success of the operation will depend in large measure upon the care which is taken to render it as nearly aseptic as possible.

Lacerations of the cervix, if extensive and especially if the cause of free hemorrhage, should be first repaired with a few stitches, beginning at the upper angle of the tear, then the perineum and posterior floor of the vaginal walls, being careful to include a sufficient amount of tissue to insure good firm union and when possible bring muscle in contact with muscle. If the laceration is complete, repair that of the rectum first, with buried sutures, then with deep, strong perineal sutures, catching up the torn fibers of the sphincter muscle. Finally, carefully inspect the anterior walls and subpubic sulci for possible solutions of continuity of tissues which may be submucous and not easily apparent. If the parts are badly contused, swollen and discolored, a prolonged douching with a hot salt solution will do much to restore a more normal appearance. Chromicized catgut forms the most satisfactory suture material in these cases.

Complications may follow the performance of the operation. Hemorrhage usually ceases when the stitches are tied. Should it persist, pressure may be applied upon the perineum by a firm pad of gauze, and a gauze tampon may be used in the vagina. Infection may occur independently of infection in the uterus or a general septic infection. I have had this happen once, and was compelled to remove the sutures, and, of course, failed to get union. Thorough asepsis prevents this complication in most cases, and the avoidance of a strong bichloride solution is a matter of some importance. Vaginal douches should, in my opinion, be avoided in these cases, because of the danger that the douche may carry infective material from the perineum upward to the cervix.

The after-treatment of these cases consists of surgical cleanliness, so applied as least to disturb the tissues and parts which are healing.

Convalescence is not retarded by the operation, and if successful, our patient is saved from the embarrassment of a later introduction to a gynecologist. Indeed, if the obstetrician did his whole duty in these cases the field of the gynecologist would be much curtailed.

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James N. West, M. D.:

I propose to consider some points in the *treatment of uterine fibromyomata*:

The general indications for operation, I believe to be as follows:

Great size.	Causing visceral changes, exhaustion and inconvenience.
Rapid growth.	Indicating that the tumor may be malignant.
Pressure upon ureter, bladder or rectum.	Interfering with the functions of these structures.
Hemorrhage.	Which cannot be controlled except by operation.
Interference with labor.	As in the case of a tumor so situated in a pregnant uterus as to make normal labor impossible.
Causing sterility.	As when a tumor causes repeated abortions, or prevents fecundation.

Various complications may exist in coincidence with the tumor which taken together with it will prove sufficient indication for operation.

Having determined that an operation is necessary, we will be governed in our choice of operations entirely by the size and situation of the tumors. In the choice between hysterectomy and myomectomy we must recognize that for the removal of intramural tumors, myomectomy is a much more dangerous operation than hysterectomy. My known experience of two deaths in twenty-eight cases of myomectomy teaches me this. But while the death rate is undoubtedly greater in myomectomy, if the case results successfully, it is much more brilliant. In one case I removed sixteen tumors by the abdominal route, and the woman afterward bore a healthy child.

The social condition of the patient is an important factor in determining whether myomectomy shall be performed or not. In women who have passed the menopause or those who have passed forty years of age without child-bearing, I should unhesitatingly do the operation which was the least dangerous, and this in most cases would be hysterectomy, but in young married women where the conditions come within those described below as being within the bounds of safety and where relative sterility has existed on account of the tumors, we would feel willing to subject the woman to a greater risk for the sake of the happy result which might be reasonably hoped for.

All pedunculated tumors can be removed with great ease and safety, whether they be pedunculated into the uterus or abdomen.

I believe that the removal of from one to four tumors situated within the muscle or encroaching upon the endometrium and ranging in size from two and a half inches and less should be considered the limit of safety for tumors so situated. Sub-peritoneal tumors can be removed with great ease and safety in considerable number. Both the cases which I lost had more than two tumors encroaching upon the endometrium. One died of peritonitis and one of septicemia. I believe that both would have recovered after hysterectomy. In regard to the size of a single intramural tumor requiring operation, I would say that I should not wish to do myomectomy upon one having a greater diameter than four and a half inches. I removed

one once slightly larger than this and the patient barely escaped with her life. In such cases the uterus is so large that a considerable space has to be obliterated where the tumor has been shelled out, thus causing an element of danger.

I beg to call attention to a procedure which has now nearly become obsolete, but which has a very distinct field of usefulness, and that is dilatation of the cervix and removal of submucous tumors. This was formerly the only way in which myomectomy was done, and oftentimes a small submucous tumor may cause such great hemorrhage as to almost threaten the life of the patient, which may be easily removed in this way.

In this connection I would say that an exploration of the cavity of the uterus is often of the greatest value. This I have done many times without a single mishap in the following manner:

The patient is prepared as for an operation and a medium-sized seatangle tent dipped in pure carbolic acid and quickly inserted in the cervix and the vagina packed with cotton tampons squeezed out of a two per cent. solution. Then twelve hours after insertion this tent is removed and three more inserted in the same way side by side in the cervix; in twelve hours more these can be removed and the cervix will be found to be amply dilated for a digital exploration.

In all other cases except those mentioned in which myomectomy may be done, we must resort to hysterectomy.

In all cases where rapidity of the growth, discharges, or any other symptoms lead us to believe that there is a complication of malignant disease, or where the cervix is badly lacerated or in a condition of adenomatous hyperplasia, I practice complete hysterectomy as well as removal of tubes and ovaries. In others which form the vast majority of cases I do supravaginal hysterectomy.

The latter operation has many advantages over the former. It preserves the relations in the pelvis, leaves no scar in the vagina, offers no danger of injury to the uterus. Does not cause so much hemorrhage, causes much less shock and can be done more rapidly.

For years I have practiced leaving one or both ovaries where I performed supravaginal hysterectomy and when the ovaries were in good condition.

This means that in cases where the uterus is not believed to contain malignant disease and in all those cases where complete hysterectomy is not indicated, and except in women who have passed the menopause the ovaries are left.

There are several reasons which influence me to this course.

In the first place I believe it to be wise and conservative, in so far as possible, to take away only those parts which are diseased, and especially does this apply to the ovaries as they have an especial use in the economy of women, in preventing the stormy changes which sometimes occur when they are removed during the child-bearing period. I make an exception, however, in women who have passed the menopause, for here the ovaries have ceased to be of use and become at this time of life especially liable to the development of cysts. It is slightly easier to remove than to leave them.

I have found where a woman has her cervix and ovaries left behind, even though the uterus has been removed and she does not menstruate, her condition is much better afterward than when a total ablation of uterus, tubes and ovaries has been performed.



W. L. Peple, M. D.:

As to the care of patients undergoing a morbid *menopause*, few general rules can be laid down for the treatment must, of necessity, be more or less symptomatic. Every means should be used to bring the system to par, and there to maintain it. This can be done by the use of nourishing food, fresh air, tonics, and reconstitutives.

Tears of the cervix should be repaired to lessen local irritation and the possibility of reflex trouble, and also to guard against the malignant invasion of the cicatrix. Tears of the perineum should receive attention, for with vaginal atrophy, prolapse is apt to supervene. In short, every possible source of local irritation should receive intelligent attention.

Hemorrhage is a troublesome and at times an alarming symptom to deal with, for it may not be dependent upon a recognizable local cause, nor will ordinary methods check it. Absolute rest in bed, with hips elevated, hot antiseptic douches and nerve sedatives should be tried, and in one accustomed to these floodings the period should be anticipated. When a fibroid is causing bleeding at this age, we should not be too precipitate in advising hysterectomy, for many of these cases,

if patiently and judiciously handled until the menopause is passed, will not only bleed no more but the tumor will undergo shrinkage with the uterus, so that the patient is in far greater comfort than for years.

The vasomotor disturbances do not offer a field for brilliant results; but by the use of hot douches, hip and foot baths, when these symptoms are especially annoying at an overdue period, considerable relief may be experienced.

Treatment of the nervous symptoms includes all that has been suggested to put the patient in as good physical condition as possible. For the hysterical cases, with their manifold aches, pains, and morbid sensations, general massage may be used with usually good results. Static electricity has proven in my hands a most useful agent in these cases. Whether its unquestionably good results are due to any intrinsic merit it may possess or to the profound moral impression produced by so much revolving glass with the prickling of blue sparks, I could never determine. But that it does give them remarkable relief I know.

Though we are, of course, adverse to giving sedatives to these chronic cases, there will be times when we cannot do without them.

Some of these poor patients, in their vacillating depression, live on the borderland of insanity; and the support of a strong personality, which begets trust and confidence, is of more value than all the therapeutic agents under the sun. It is here that the physician is in highest sphere.

When the mind is overthrown, these cases must be treated according to the type of insanity they assume. But it is seldom, if ever, advisable to treat these cases at home, or in familiar surroundings. In the hands of strangers, under a new environment, their recovery is at times remarkable in its rapidity and completeness.



A. E. Baker, M. D.:

The *indications and contra-indications for Alexander's operation in retro-displacements of the uterus* is a subject of special interest. This operation is indicated only when the displacement is not complicated by tumor, inflammation of the uterine appendages, adhesions, or other impediments to replacement. Again, if the uterus is large and heavy, or if the

patient is too fleshy, this operation is not indicated. It has been my experience that after the uterus has been displaced for some time, that the ovaries become more or less diseased, either cystic or bound down by adhesions. Hence the necessity of not overlooking the condition of the ovaries in an operation to replace the womb. This explains how often the Alexander operation fails to cure the patient; though the uterus is put and held in beautiful positions, the ovaries still remain in their diseased state. It is the diseased ovary far more than the displaced uterus, that undermines so seriously the nervous system and general health of a woman. As a proof of this assertion, I have several patients whose ovaries have been removed, and the uterus, for want of support given by its appendages, has fallen back into Douglas' cul-de-sac, and there remained, without giving any local or constitutional symptoms. • From this experience I am greatly impressed with the importance of knowing the condition of the ovaries when replacing the uterus. From the above we must conclude that the Alexander operation is limited to a very few cases in comparison to the number of retro-displacements met with.

Intra-abdominal shortening of the round ligaments by abdominal section has exercised the ingenuity of many operators. Wylie folds the ligaments once on themselves and sews the folds together, and fastens them to the anterior wall of the uterus. Mann folds them twice on themselves by means of a special forceps, and sews the three folds together. I wish to call your attention to the union gotten by these methods. It is simply peritoneal union, which will give under any condition of weight or pressure. Experience has convinced me that only muscular union, in this class of work, can be relied upon. I had the opportunity of opening the abdomen two years after the Wylie's operation had been performed. I found the round ligaments which has been folded on themselves, the union had given away under the weight of the uterus, and the ligaments looked as if they had never been folded. The uterus, of course, regained its malposition. So Wylie's, Mann's, and Dudley's operations should be relegated to the past, in that the union they get by folding the ligaments on themselves, is faulty and does not stand because it is peritoneal union and not muscular.

Baldy's operation is a good one. The round ligament is severed near its attachment to the uterus, and the pelvic end is

drawn through an opening in the broad ligament, and stitched to the posterior surface of the uterus.

Martin, of Chicago, suspends the uterus by means of a strip of peritoneum taken from the side of the abdomen, and stitched to the fundus of the uterus. I only mention this method to condemn it.

Book Reviews.

ABDOMINAL SURGERY. By B. G. A. MOYNIHAN, M. S. (London), F. R. C. S., Senior Assistant Surgeon to Leeds General Infirmary, Leeds, England. W. B. Saunders & Co., Philadelphia and London, 1905.

Moynihan's contributions to surgery have always been of great interest to American surgeons, but his "Abdominal Operations" is among the best additions to the subject during the past year. While giving full credit and commendation to the works of others, his book deals with those procedures in which he has achieved great success and made an international reputation. His method of gastro-enterostomy and intestinal anastomosis employing rubber-covered clamps has put particularly the former operation on a very safe and reliable basis. He entirely eschews the button, bobbin and other mechanical appliances for intestinal anastomosis, believing they have no place in the surgery of to-day, having entirely served the purpose for which they were originally intended. This volume is devoted entirely to operations which are common to both sexes; no gynecological procedures are treated of, neither those applicable to kidneys, bladder or hernia. The work is interesting in that it is a complete exposition of Moynihan's methods from the preparation of the patient to after-treatment, which gives the reader opportunity to compare the relative methods of treatment of surgical cases after operation.

As usual, the publishers have made an attractive volume, good type and excellent paper.

OPERATIVE SURGERY. By JOHN J. McGRATH, M. D., Professor of Surgical Anatomy and Operative Surgery at the New York Post Graduate Medical School, New York, etc. Second Edition, Thoroughly Revised. With 265 illustrations, including many Full-Page Plates in Colors and Half-tone. 628 Royal Octavo Pages, Extra Cloth, \$4.50, net; Half-Morocco, \$5.50, net. F. A. Davis Company, Philadelphia, Pa.

The author's intention to make a practical exposition of operative surgery much the same as he does in clinical teaching has been thoroughly carried out in the published work. Surgery and practical anatomy have been studied together in such

a way as to exclude such technical points as had no special bearing on the subject considered. Diagrammatic drawings are extensively used, the author in our opinion rightly believing that by such means technics of operations are made clearer and better understood by the student. The entire subject of operative surgery is thoroughly covered. The newer operative procedures on the stomach, intestines, gall bladder and those organs and regions that are just now particularly in the surgical mind receive proper and thorough elucidation. The surgical anatomy which is given in connection with each region will prove a great advantage to the operator who desires to briefly refresh his mind with essential features of anatomy preliminary to an operation.

THE PHYSICAL EXAMINATION OF INFANTS AND YOUNG CHILDREN. By THERON WENDELL KILMER, M. D., Instructor in Pediatrics in the New York Polyclinic Medical School, etc. F. A. Davis Company, Philadelphia, 1906.

A careful perusal of this little volume will prove of immense benefit to anyone interested in the treatment of children. The author makes a strong plea for exact and painstaking observation of the physical signs of diseases of children, which data being determined with more or less accuracy, the diagnosis naturally suggests itself. The failure frequently to establish a diagnosis, and the subsequent necessity of calling a specialist, is due to the failure of the physician to put into practice certain fundamental and proximate elements of the physical examination which he knows or should know as well as the expert. Dr. Kilmer has presented that phase of the subject in a very interesting and practical way, and we should particularly commend a careful study of his methods to the medical students and young practitioners, to whom a sick baby is often a very intricate and puzzling problem.

Translations.

The Cervix in Pregnancy.—Aschoff (Monats. f. Geb. u. Gyn.) has carefully studied the precise nature of the changes which the cervix undergoes during pregnancy. According to his researches, the uterine segment of the cervical canal always develops decidual cells and shares in the formation of the cavity which lodges the ovum, the fetal membranes coming into close relation with the structures composing the cervical mucosa. It constitutes, in fact, an essential part of the lower uterine segment. The lower or vaginal segment of the cervical canal occasionally develops decidua which may even

occupy its whole extent, but Aschoff has never found any evidence that it normally forms part of the fetal cavity. Its mucosa does not unite, like endometrium and the mucous membrane of the upper part of the cervical canal, with the elements in the fetal membranes. On the other hand a distinct change is often observed towards term, a funnel-shaped dilatation developing so as to simulate the lower part of the fetal cavity, but it is always sharply defined from the inferior uterine segment. The lower limits of attachment of the membranes represent the lower border of that segment. It is only in cases of abnormal attachment of the placenta that the inferior part of the cervical canal becomes portion of the fetal cavity.

Glycosuria in Pregnancy.—Möller (*Ugeskrift for Læger*) kept a case of glycosuria limited to pregnancy under close observation. The patient was thirty-six years old and in her first pregnancy. Sugar was detected early in gestation, and it increased up to the fourth month, when it reached 2.93 per cent. Then the patient was put under suitable diet, and the proportion of sugar diminished until it had almost disappeared by the end of the seventh month, when the dieting was discontinued. There was no further rise and the patient was delivered spontaneously at term. A few days later the proportion of sugar was 0.15 per cent. The patient was able to suckle her child. After convalescence no sugar could be detected.

Ligature of Inferior Vena Cava.—Houzel (*Arch. Prov. de Chir.*, No. 9, 1905) publishes the results of a recent examination of a woman aged forty, on whom four years ago he practiced ligature of the inferior vena cava just below the right kidney for laceration of this vessel in the course of an operation on a large pyonephrosis. This patient made a rapid recovery, and after a short period of convalescence presented no indications of disturbance of the circulation beyond a slight edema of the ankles. Her present condition, it is stated, proves that in this case sudden and complete closure of the inferior vena cava below the kidneys has left no trace, and has resulted in a durable, and, from both an operative and a physiological point of view, a complete cure. With the exception of slight and superficial varicosity of the legs, which, the author states, might naturally be present in a woman who, like the subject of this paper, had done much hard work and given birth to several children, there are no signs of superficial venous engorgement. In this remarkable absence of varicosity of the superficial abdominal veins and of signs of impaired circulation in the lower limbs, the author's case agrees with cases of ligature of the inferior vena cava for accidental laceration during surgical

operation, that have been reported by Bottini and Hartmann, and also with the results of recent experiments on dogs. The results of both clinical and physiological observation prove beyond doubt, in the author's opinion, that after complete obstruction of the vena cava below the kidneys, the return of the venous blood from the lower part of the body is effected by the azygos, the lumbar plexus, and the intrarachidian veins.

Diagnosis of Short Umbilical Cord before and during Parturition.—G. Vetrano (Il Policlin.) considers that the subject of shortness of the cord has been neglected in text-books, though it has been long recognized as a cause of dystocia. He quotes two cases: One patient, aged twenty-eight, was pregnant for the third time, after two normal pregnancies, succeeded in each case by a normal parturition at term and a physiological puerperium. Her last menstruation was at the beginning of July, 1904. The time of quickening was not noticed, though it had been definite in the earlier pregnancies. In the last months of pregnancy there were pains in the right renal region and in the left half of the uterus. The membranes ruptured on the night of April 7, and next morning a midwife came and stayed for twelve hours. When a doctor arrived pains had ceased for ten hours, the fetal head was in the left occipito-posterior position, internal rotation having failed. There was complete uterine inertia and the instrumental extraction of the dead fetus was immediately followed by the delivery of the membranes and placenta with great hemorrhage. The cord measured 30 cm.

The second patient was thirty-two years old and had passed through five previous pregnancies, terminated always at the right time and followed by a physiological puerperium. She last menstruated in July, 1904. From the fifth month onwards she was disturbed by pain constantly at the same point of the uterus. On April 15 labor set in with severe hemorrhage. The membranes were tense and no placental tissue could be felt. The dead fetus presented by the pelvis with its back to the left side. It was extracted manually, and the mother almost died from hemorrhage, but eventually recovered. The cord measured 30 cm. The author concludes from these cases that uterine pains of constant position, posterior positions of the fetus, and hemorrhage during labor should excite the suspicion that the umbilical cord is very short.

Hypertrophied Kidney Removed During Pregnancy.—Schauta (Monats. f. Geb. u. Gyn.) recently reported before the Vienna Obstetrical Society a case where hydronephrosis was suspected in a patient aged twenty-one. When examined during the second month of her pregnancy, a tumor of the size

of a man's head occupied the right half of the abdomen. The tumor proved to be a hypernephroma, which was removed together with the unhyertrophied part of the right kidney. The patient recovered and the left kidney functioned well after the operation.

Uterine Fibroid and Uterine Cancer.—Piquand (*Annales de. Gyn. et d'Obst.*) has published a very complete summary of this question based on clinical and surgical evidence up to the present year. He concludes: (1) That he has been able to collect 360 reliable reports of this condition; (2) that there are three different varieties of these associated tumors. First, epithelioma may develop on a uterine fibro-myoma, a rare condition; 44 cases have been collected by Piquand. The malignant disease is nearly always derived from the uterine mucosa, occasionally from the ovary or other neighboring organ, and very rarely from lymphatic infection causing neoplastic emboli from distant parts (2 cases recorded). Piquand includes 24 more cases where primary cancer undoubtedly developed in a uterine fibro-myoma; the epithelial elements usually come from involutions of the uterine endometrium, but in exceptional cases are derived from relics of Gärtner's or the Wolffian duct.

Secondly, cancer of the body of the uterus may exist together with a fibro-myoma. This is the most frequent combination. Piquand has collected 179 cases, and he further declares that according to the statistics of 1000 cases of uterine fibroid, cancer of the uterus was present in 15, a proportion eight or nine times higher than in other women. Thirdly, there remain cases where uterine fibroid complicates cancer of the cervix. The relation of the new growths is not so clear, the fibro-myoma appears to predispose the patient to cancer of the cervix. When the latter disease is clearly seen to be consecutive to fibroid, the subject is generally a multipara between 45 and 50, a remarkable fact since cancer of the body of the uterus consecutive to fibroid is most frequent amongst multiparæ between 50 and 60. (3) That total abdominal hysterectomy is the only surgical measure of any avail though it is dangerous and recurrence is frequent. Out of 68 total hysterectomies for fibroid and cancer of the body 11 proved fatal, and out of 52 for fibroid and cancer of the cervix 9 were fatal. Piquand considers the frequent association of cancer with fibro-myoma as a strong argument in favor of hysterectomy whenever the latter tumor develops.

Primary Chorion-epithelioma of the Tube.—Risel (*Zeitschr. f. Geburts, u. Gynäk.*) has collected 11 cases of this disease associated with tubal gestation, over 300 examples of chorion-epithelioma in uterine pregnancy having been reported.

He publishes a new case where Zwiefel operated. The patient was thirty-five years of age, and her last pregnancy had occurred five years before the operation. She had been troubled for about three months with irregular hemorrhages and attacks of abdominal pain. A tense, elastic body was detected in Douglas' pouch and the left fornix, diagnosed as an ovarian cyst or double pyosalpinx chiefly affecting the left tube. At the operation a tumor the size of a fist and resembling placenta was found to occupy the site of the left appendages and was removed. Recovery was speedy, but recurrence very rapid; the patient dying within four months. The tumor removed at the operation was a chorion-epithelioma originating in a left tubal sac. A great mass of malignant substance developed between the uterus and the rectum, the liver was full of metastatic deposits and minute metastases were detected in the lungs. All these recurrent growths corresponded histologically with the tumor of the Fallopian tube.

Umbilical Surgery on the Newborn Child.—Meyer (Monats. f. Geb. u. Gyn.) operated recently on a newborn child with a large hernia without using an anesthetic, and the infant recovered, although the operation lasted for one hour and a quarter. The sac was very thick and consisted of amnion and peritoneum; they were separated and then a coil of ileum was discovered bearing a cystic Meckel's diverticulum. The neck of the sac was dilated, the cyst separated from the sac to which it adhered and resected, but suture of the ileum proved very difficult. The intestines were then reduced, the peritoneum sutured, the sac excised, and the integuments closed. Out of 32 radical operations for hernia of the cord at birth 6 deaths occurred, whilst 4 out of 7 cases of that form of hernia treated expectantly proved fatal.

Primary Tuberculosis of Uterus and Tubes.—Nebesky (Monats. f. Geb. u. Gyn.) reports a case where that condition was verified by operation. The patient was a factory hand aged thirty-three, subject for eight months to menorrhagia, and for a week before she came under observation to severe sacral and hypogastric pain. There was no history of tubercle. The abdomen was not distended, nor tender on pressure; the uterus was tough, somewhat enlarged, anteverted and drawn towards the sacrum by a mass of cicatricial tissue behind it; the appendages were evidently involved in the dense tissue. The curette was employed, and after repeated examinations of quantities of friable, broken-down material removed from the uterine walls, the tubercle bacillus was detected. In April, 1904, Ehrendorfer operated. Not a single tuberculous mass could be discovered on the visceral or parietal peritoneum, pelvic or

abdominal. The diseased tubes were removed, but as the ovaries showed no sign of tubercle they were saved, whilst the uterus and cervix were taken away with the tubes. The patient was in very good health over a year after the operation, and quite free from any symptom of tuberculous disease. The pathological appearances of the uterus and tubes are carefully described. The serous and subserous tissue was quite free from tuberculous disease, the endometrium was much involved, whilst in the cervical canal were tuberculous ulcers with the muscular coat for a base. Nebesky made out that ascending infection was evident, as tuberculosis was advanced in the cervical canal, marked in the endometrium, and much less in evidence in the tubal mucosa. Nebesky insists on the adoption of Veit and Martin's principle that in localized tuberculous disease of the female genital tract all the infected organs should be extirpated.

Conservative Treatment of Inflamed Appendages.—Fett (Monats. f. Geb. u. Gyn.) holds that under all circumstances inflammatory diseases of the appendages should be treated on strictly conservative principles. When acute, purely expectant treatment will be sufficient; when chronic, means by which absorption is promoted are at our disposal. Fett finds the hot-air treatment is particularly beneficial, but in bad cases it must be continued for months; then it will insure cure as perfect as when an acute case is taken in time. The fact of pregnancies following the systematic management of chronic salpingo-oöphoritis, and the occasional evidence obtained at abdominal operations for other diseases where the once-inflamed tubes and ovaries can be inspected, alike prove that some of the most advanced and grave results of the class of disorder in question may be cured by medication. Exceptional conditions may, it is true, demand operation, as when perforative peritonitis is threatened, or when long-standing medical treatment proves unavailing. Even then the operation should be as conservative as possible, for an organ still capable of exercising its functions should never be removed. Operation from the vaginal side is only to be practiced when a localized collection of pus can be clearly defined by the evidence of the touch and of clinical symptoms; then incision and drainage is indicated to be followed by a return to medication. Fett admits that backward displacements of the uterus following pelvic inflammation may require a plastic operation, such as ventrifixation.

Abdominal Extirpation of Vaginal Cancer.—Wertheim (Zentralbl. f. Gynäk.) recently exhibited before a medical society a series of preparations illustrating 11 cases of removal of the cancerous vagina for primary or secondary disease. When the entire vagina has to be removed, it is best after the

upper part of the genital tract has been set free to dissect the vagina from below upwards after setting free its attachments to the introitus; in this way the lower part of the canal is saved from all contact with cancerous elements. In 2 out of the 11 cases vesico-vaginal fistula developed as a result of secondary necrosis of the posterior wall of the bladder; this grave sequel has, however, also followed extirpation of the vagina by the perineal and also by the sacral method. In 1 of the 2 cases the fistula closed spontaneously within a few weeks, in the second a plastic operation was necessary. In a third case a ureteral fistula developed in the same manner, the operator was meditating either implantation of the ureter into the bladder or removal of the kidney; but this case was quite recent. In the 11 cases recurrence had occurred in only 2, and in 1 of the 2 not until two years after the operation, in the other six months after extirpation of the vagina. There was immunity from recurrence for five years in 2 cases, for four years in 2, and for three years in 1. The remaining 4 cases free from any sign of secondary disease were recent. In none of the series were cancerous glands discovered; in 7 there was no glandular change of any kind, in 4 a few were swollen though not apparently cancerous.

Puerperal Septicemia: Gas in the Uterine Tissues.—Kamann (*Monats. f. Geb. u. Gyn.*) reports an example of fatal sepsis, where gas was found, not in the uterine cavity (physometra), but in the uterine tissues. The patient was a 5-para, with contracted pelvis, delivered by turning and extraction, in the course of which maneuvers incomplete rupture of the uterus occurred. On the third day signs of septicemia appeared, and death occurred on the eighth. The uterus was found with walls from 2 3-4 in. to 3 in. in thickness. To a certain extent the thickening was due to edematous infiltration and to collections of pus in lymph sinuses, but it was mainly accounted for by the development of air in the infected tissues. Long chains of streptococci were the only germs which could be detected, no gas-producing microbes being found.

Is Menstruation Physiological or Pathological?—Tobler (*Monats. f. Geb. u. Gyn.*) has during the past two years studied the menstrual histories of 1020 women, with a view to ascertain as precisely as possible the influence of the catamenia on the female economy. As is the case with most previous observers, Tobler finds that in the great majority of women at the present day menstruation is associated with distinct deterioration of the general health and diminution of functional energy. In 26 per cent. local pain, general malaise, and psychoses coexist; in larger proportions come those where gen-

eral weak health, or else some psychosis, or else local pain, is alone experienced at the period. In 16 per cent. none of these symptoms are present, and Tobler makes a separate group of 3.3 per cent. where the mind and functions are stronger during the period. In about 3.6 per cent., constituting yet another class, this increase of strength during the presence of the catamenia is associated with distinct disturbances in the intervals. Tobler considers that the familiar disturbances during menstruation are pathological, but that the process itself is physiological. Deterioration of constitution and unhealthy habits and surroundings cause the increase of tissue change, which is part of the process, to result in toxic products prejudicial to the system, whilst, normally, products favorable to the economy should be evolved.

Removal of Tumor of Suprarenal Capsule.—Heidemann (Monats. f. Geb. u. Gyn.) reports the removal of a tuberculous tumor of the suprarenal capsule of the size of a child's head. About 24 cases were collected by Wendel and published in 1904, but it was not always clear how far they were malignant or innocent. Heidemann's patient was a lady, aged fifty-two, who had suffered from a steadily-increasing debility, emaciation, and nervous depression. She had previously been very robust. A tumor in the right loin was visible on inspection; it was freely movable forwards. The urine was albuminous, and the albumen, it was reported, proceeded from both kidneys. Abdominal nephrectomy was performed, the operator preferring it to a lumbar operation when a renal or suprarenal tumor has to be removed. It was not possible to save the right kidney. The tumor was reported to be a typical adrenal "struma." The patient recovered and steadily improved in general health until she regained her former strength. Heidemann lays stress on the absence of any kind of discoloration of the skin and of any hemorrhagic tendency, whether before, during or after the operation, yet the tumor was of the type seen in Addison's disease, and when it was removed the constitutional symptoms disappeared. The albuminuria also passed away, but in a discussion on this case some doubt was expressed as to whether the left kidney was the seat of nephritis or any other disease which is associated with albuminuria.

General Paralysis and Pregnancy.—Gulli (Rassegna d'Ostetr. e Ginec.) observes that the coincidence of gestation and general paralysis is very rare. He has observed a case where the patient was a four-para, forty years of age, alcoholic, but without any symptom of syphilis. The first signs of the mental disease appeared at the beginning of the pregnancy, megalomania, ataxy, and the Argyll-Robertson symptom became marked. The eighth month of pregnancy had been reached

when Gulli examined the patient. He immediately induced labor by means of the douche and dilator. A sickly but not malformed infant was delivered and reared. After delivery the mother's mental condition improved, but the pupil symptom persisted, and permanent cure seemed highly improbable. Gulli considers that general paralysis, like polyneuritis, is aggravated by gestation, the autointoxication of pregnancy acting unfavorably on the nervous system. On that account the pregnancy should always be uninterrupted.

The Treatment of Insufficiency of Milk in Women.—Burzagli (Gazz. degli. Osped.) after a good deal of somewhat rhetorical condemnation of the mothers who might but will not nurse their infants, proceeds to deal with those who would but can not owing to various causes. Setting aside definite physical causes in the nipples or breasts, he discusses pure deficiency of secretion in breasts which otherwise appear healthy. Of the numerous galactogogues in vogue none seem to have any reliable action. Hearing that veterinary surgeons were in the habit of increasing the lacteal secretion in animals by means of aniseed given internally as well as used externally, the author tried this drug in the case of two healthy women whose milk became so poor and scanty that after trying various remedies in vain they had recourse to goats' milk for their children. After six days' treatment with a 2.5 per cent. infusion of aniseed taken internally (about a litre a day), and applied externally as a fomentation, the milk gradually came back, and the mothers were able to go on suckling their children. Two cases do not prove much, but coupled with the larger experience of veterinary surgeons the author thinks it well worth further trial.

Hyperemesis Gravidarum.—(Monat. f. Geburts. und Gynäk.) The investigations and discussions of the subject of the excessive vomiting of pregnancy have not yet made the etiology of the disease clear. In this connection a review of several papers upon this subject which have appeared will prove interesting. Graefe discusses Boehm's theory as to its causation, namely, the syncytial intoxication theory. This view is that the simple vomiting of pregnancy becomes excessive from the third to the fifth month, because at this period there is a considerable degeneration of chorionic villi, which take no part in the formation of the placenta, and that as a result of this degeneration the syncytial remnants enter the blood stream and there exert a toxic effect. This intoxication produces a species of immunity in the patient which leads Boehm to suggest that this is the explanation of the fact that

multiparous women are not so likely to suffer from excessive vomiting.

Three categories of cases can be noted, however, in which Boehm agrees that this view will not hold: (1) those in which vomiting begins in the second half of pregnancy; (2) those in which vomiting continues after abortion; (3) those in which the vomiting ceases after abortion and in which the patients die. In the first and second groups the author suggests diseases of the brain, kidneys, liver, alimentary canal, etc., as causes of the vomiting. In those cases of the third group which die, he believes death to be due to such a large amount of cell destruction by the syncytial toxin that recovery is impossible. Two cases reported by Pick have a direct bearing upon this statement: one died of a septic endometritis after abortion, and the other of a diphtheritic endometritis. In such cases only a post-mortem examination can reveal the true cause of death, and it is probable that the excessive vomiting had nothing to do with the death in either of these cases. Another cause of vomiting may be the retention of conception products, where, after abortion, the vomiting does not cease until the retained tissues have been removed. The author is not convinced by Boehm's views, and asks: If one believes that hysteria may be a real cause of excessive vomiting of pregnancy, how could a purely psychical mode of treatment cure it if a syncytial intoxication were the cause? Kaltenbach, who is the great exponent of the view that hysteria is the prime cause of excessive vomiting, assumes that hysteria is a true functional neurosis, which by increasing the reflex excitability of the vomiting center, causes hyperemesis. And, further, that the cure of hyperemesis by psychical or physical treatment is brought about in the same way as the cure of an hysterical paralysis of contracture.

If the usual stigmata of hysteria be present the diagnosis is easy, but hysteria may be present even if they are not found. The author agrees with Kaltenbach, and he places great importance upon the fact that many primagravidæ have read of excessive vomiting, and that an unwelcome conception may really be the underlying cause of a functional neurosis. Numerous cases are quoted as upholding this theory, among them the two above mentioned which ended fatally, and the one in which the removal of placental remains was followed by cure. This latter case the author believes favors Kaltenbach's view, for this reason: the patient still believed herself pregnant after her incomplete abortion, and it was not until she was convinced by the removal of placental remains that she was no longer pregnant that the vomiting ceased. The removal of the placental remains acted by suggestion and not as by the removal of a toxic substance. The other cases were treated by rest in bed, milk diet, and removal from friends.

Zaborsky discusses hyperemesis from other points of view and distinguishes those cases which have some obvious lesion of the generative or other tract which could reflexly cause vomiting, and those in which apparently no lesion of any kind exists. No special hypothesis is necessary to explain hyperemesis when lesions exist, for a pregnant woman has simple vomiting as a general rule, and any existing lesion will make it worse. Where no obvious lesion exists the views of Fischel, Lindeman, Dirmoser, Clivio, and Boehm may be considered with advantage. All these writers, with the exception of Boehm, regard hyperemesis as a manifestation of auto-intoxication, either miasmatic or having its origin in the alimentary canal. Dirmoser takes this view for several reasons: (1) the appearance is that of a serious disease with great weakness, rising pulse, fever, and jaundice; (2) urinary analysis gives evidence of decomposition of bowel contents, such as indol, skatol, albumin, and kidney elements; (3) the post-mortem appearances are those of parenchymatous degeneration of liver, kidneys, etc., such as is found in other conditions of toxemia. Zaborsky, however, believes that it is just as simple to explain these cases as reflex vomiting from the pressure of scybala or a distended bladder on the uterus, and that the washing out of the tract as recommended by Dirmoses and others cures the case by removing pressure. Hence, he does not believe that the majority, at all events, are cases of auto-intoxication. Vomiting tends to cease as the uterus rises out of the pelvis; if, however, it does not cease at that time, auto-intoxication from whatever source may play an important part.

Baisch in his paper considers both hyperemesis and salivation in pregnancy. He reviews the various theories which have been advanced under the headings: (1) obvious diseases of organs leading to excessive vomiting, such as rigidity of cervix, erosion, endometritis, displacements of the uterus, liver, kidney, stomach, and blood and brain diseases; (2) intoxication from alimentary canal, from lack of salt in food, and from the developing embryo; (3) reflex neurosis of the stomach starting from uterus or intestine, or an increased reflex irritability; (4) bacterial infection. If the treatment of an obvious lesion cures hyperemesis, then that lesion must be looked upon as the cause, and so the first group may be looked upon as obvious causes. But only a small percentage of the cases fall in this group. Of the other groups the author looks upon the reflex neuroses and reflex increased irritability as the most likely. Two important points must be considered in connection with this theory: (1) that hyperemesis is directly concerned with the embedding of the embryo in the wall of the uterus and ceases when the union thus formed is broken after abortion; (2) the gradual increase of simple vomiting until it becomes excessive. No hard-and-fast line can be drawn between these two conditions. On these

considerations he believes that it must be allowed that the irritation which reflexly causes vomiting must arise from the growing embryo itself. This is understood when one considers the whole effect of the embryo on the maternal organism—*e. g.*, the growth of breast tissue and the milk secretion. These reflex influences also affect the centers for the digestive organs, as is observed in the ravenous hunger which sometimes is present as a result of pregnancy.

Pregnancy is a physiological condition and most women are able to meet the demands of it; but if there be any insufficiency, the reflex disturbances will produce such an irritation of centers that excessive vomiting perhaps results. As to the nature of the irritation which causes this reflex excitability, we must consider its source in the uterus, its effects on the medullary centers, and its effect on the periphery of the reflex arc, namely, the stomach. From these points, too, the treatment may be established. Artificial abortion is indicated when the uterus is at fault, narcotics and suggestion when the cause lies in the nerve centers, and dietetic measures when the chief failure is in the performance of the stomach functions. The chief difficulty is to decide when abortion should be produced. The danger of putting it off until too late is very great, but if loss of weight, prolonged fever, albuminuria, pulse, frequently diazo reaction, etc., are carefully considered, there should be less difficulty in this direction when diet, suggestion, local treatment of uterus, etc., fail. Excessive salivation in connection with hyperemesis adds to the seriousness of the condition, and there seems little doubt that the same reflex excitability of nerve centers and reflex irritations may give rise to both conditions.

Karl Williams believes that the evidence we have at present justifies us in dividing the cases of serious vomiting of pregnancy into the following groups: (1) reflex; (2) neurotic; (3) toxemic. Reflex vomiting in pregnancy may occur from abnormalities of the genital tract or ovum which existed prior to the onset of pregnancy or are coincident with it, such as (*a*) displacements of the uterus, particularly retroflexions; (*b*) ovarian tumors; (*c*) certain cases of endometritis; (*d*) abnormalities of the ovum, such as hydatidiform mole, hydramnios, and certain cases of twin pregnancy. The abnormal conditions of the cervix, so frequently mentioned in the literature, should not be considered as factors in the causation of reflex vomiting, since it is probable that the occasional cures following their treatment are only striking examples of the curative effect of suggestion. Many writers have contended that most, if not all, cases of vomiting of pregnancy are neurotic in origin and more or less closely allied to hysteria, and were amenable to suggestive treatment. Williams considers this view too extreme, but nevertheless believes that it holds good

for many cases. This variety of vomiting should be diagnosed only after excluding organic lesions and demonstrating the absence of toxemia by a most thorough examination of the urine. Toxemic vomiting was, according to Williams, first suggested by Fischel in 1884. In his case the toxemic nature of the condition was attributed to the absorption of toxic materials from the impacted large intestine. During the past ten years the toxic theory of the vomiting of pregnancy has commanded a more and more prominent position, and all sorts of theories concerning the origin and nature of the toxic material have been advanced. Among them are (a) secretion of corpus luteum; (b) secretion of ovary; (c) absorption from intestines; (d) hepatotoxemia (Pinard and Bouffe de St. Blaise); (e) invasion of the maternal organism by fetal elements, the syncytiotoxin theory of Veit, Boehm and others; (f) its identity with eclampsia on the one hand and acute yellow atrophy of the liver on the other (Champetier de Ribes and Bouffe de St. Blaise, Stone, Ewing, and Edgar). From his own experience as well as that of Stone and Ewing, Williams feels no hesitation in saying that in at least a certain proportion of the toxemic cases of vomiting of pregnancy characteristic lesions may be found at autopsy, and are identical with those observed in acute yellow atrophy and icterus gravis.

These consist in the degeneration and necrosis of the central portions of the liver lobules and the fatty degeneration and necrosis of the secretory portions of the kidneys, and can only be explained on the assumption that some powerfully toxic substance is circulating in the blood. At present we are absolutely ignorant as to the exact nature of this toxic substance or substances, though in the present state of our knowledge it would seem most natural to suppose that they are metabolic in origin and are directly connected with pregnancy, though whether derived from the mother or fetus or both is not known. All that we can state definitely at this time is that in some cases of pernicious vomiting we have to deal with a toxemia which gives rise to serious lesions in the liver and later in the kidneys, and that the latter are secondary in character, as is indicated by the fact that the urine does not contain albumin until shortly before death. Associated with these lesions is a striking change in metabolism, which is manifested by a marked increase in the percentage of nitrogen put out as ammonia compared with the total nitrogen of the urine, so that the former instead of being 3 to 5 per cent, as normal, may rise to 16, 32, or even 46 per cent., as in several of the cases. The practical outcome of this condition in the writer's experience is that a marked increase in the ammonia coefficient in women suffering from pernicious vomiting indicates the existence of a serious toxemia, which, if allowed to continue, will be found to be accompanied by lesions of the liver and other organs inconsistent with life.

Under such circumstances abortion should be induced as soon as the condition is detected, as it offers the only hope of checking the toxemia and saving the life of the patient.* His experience will not justify him in laying down definite rules as to how great an elevation in the ammonia coefficient is consistent with the safe continuance of pregnancy. But until further experience demonstrates to the contrary, it would seem safe to assume that an ammonia coefficient of 10 per cent. represents the danger signal, and immediate interference is demanded as soon as it is reached. In the reflex and neurotic forms of vomiting the ammonia output remains normal, and thus not only affords a means of diagnosis between the neurotic and toxic varieties of vomiting, but is a most valuable guide as to treatment.

The writer agrees with Stone and Ewing as to the anatomical lesions found in certain cases of vomiting of pregnancy, but takes sharp issue with them when they contend that the toxic vomiting, acute yellow atrophy, and eclampsia are manifestations of one and the same toxemia. His experience teaches him that there are at least two toxemias of pregnancy, and probably more—one giving rise to the vomiting of pregnancy and acute yellow atrophy; and the other to eclampsia. In both necrotic lesions occur in the liver, but differ totally in character in the two diseases and need to be seen only once to be appreciated. In eclampsia the lesions begin in the portal spaces and invade the lobule from the periphery toward the center; while in the vomiting of pregnancy the necrosis begins in the center of the lobule and spreads peripherally and never involves the portal spaces. In most cases of eclampsia and pre-eclamptic toxemia there are marked signs of involvement of the kidneys and general circulation—as manifested by scanty urine in proportion to the intake of fluid, the early appearance of pronounced albuminuria, and the presence of casts and edema.

In vomiting, on the other hand, the urinary output is diminished only as the intake of fluids is interfered with, and albumin and casts are present only in the last days or hours of life, while edema is absent.

Chemical examination of the urine shows in eclampsia the total amount of nitrogen greatly diminished, while the ammonia coefficient remains practically normal. In vomiting, on the contrary, in spite of the scanty amount of urine, the amount of total nitrogen remains approximately normal, while the ammonia coefficient is wonderfully elevated.

Generally speaking he regards a high ammonia output as a favorable prognostic sign in eclampsia, and a very ominous one in vomiting.

The above discussion indicates the necessity for determining by careful study the type of case one has before beginning treatment. Local pelvic disorders, such as uterine displace-

ments, cervical inflammation, or rectal impaction having been corrected, the gastro-intestinal tract routinely should receive treatment, and of all means at our disposal daily lavage of the colon with two or more quarts of salt solution will be found most valuable. The frequency of fecal concretions and mucous accumulations in this disease are astonishing. Calomel and salines are further aids in elimination. Appropriate diet, and, what is of very great value in the successful handling of these cases, the gaining of moral control of the patient, are necessary. Patients with unmistakable hysterical symptoms should always be isolated and subjected to a modified rest treatment in which hydrotherapeutics are profitably employed. A temperature record, repeated examinations of the blood and the vomited material, stomach lavage, critical examinations of the urine, and of the cardiovascular system help to an intelligent decision as to the necessity for terminating pregnancy. Estimation of the ammonia output, according to Williams, should be an efficient guide.

Fibroma-Molluscum of Vagina Impeding Labor.—Füth (Zentralbl. f. Gynäk.) exhibited at a meeting of a medical society a woman, aged twenty-five, subject since childhood to numerous pigmentary nevi and small fibroma-molluscum growths over the trunk. A bulky tumor of the same class occupied the inner part of the left thigh, extending backwards to the buttock so that its middle portion involved the perineum, left labia and left vaginal wall. The patient had recently been delivered artificially at the end of her first pregnancy. Füth attended her and found that spontaneous delivery was impossible. The occiput presented in the first position. The middle part of the vagina, owing to the tumor and to changes in tissues adjacent to it, was converted into a rigid pipe which only admitted the passage of two fingers. The membranes had ruptured, the os was dilated to the diameter of a half-crown piece; its edge was rather rigid. The stenosis of the vagina precluded all chance of delivery of the child entire through that canal. Cæsarean section was considered inadvisable, as the child was probably dead, meconium escaping, and the patient's temperature was high. Oblique incisions were made with a metrotome along the normal side of the posterior vaginal column, then perforation and extraction was found practicable. Hemorrhage, which had been feared, proved trifling, although a small laceration of the cervix occurred, whilst the oblique incision on the right side of the vagina had been extended forward during extraction, forming a laceration which involved the connective tissue outside the vagina and the urethro-vaginal septum. This laceration was repaired by suture, but the vaginal incisions were

simply tamponed. After convalescence, the stenosis of the vagina became as rigid and narrow as before. Should the patient become pregnant again, Cæsarean section will probably be performed.

Interstitial or Tubo-uterine Pregnancy.—Kannegiesser (Zentralbl. f. Gynäk.) reports a case in which a woman, aged twenty-seven, twice delivered normally at term, was seized on March 27, 1905, eight weeks after the last period, with symptoms of intraperitoneal hemorrhage. They began a few hours after an attack of pain caused by lifting a heavy bundle. Kannegiesser lays stress on the fact that, although the patient was clearly suffering from internal hemorrhage due to a ruptured gestation sac, the fornices were free, and the only palpable condition in any way abnormal was enlargement of the uterus. On opening the abdominal cavity, two and one-half pints of liquid blood and clot were removed. The hemorrhage proceeded from a villous mass only as big as a pea, posterior to the left cornu. This mass was connected with a sac lined with villi which projected into the uterine cavity. An elliptical piece of the cornu was excised; then the operator passed his finger into the uterine cavity and found that the os internum was closed. The endometrium was scraped away with a sharp spoon. Lastly, the wound in the cornu was closed, as in a conservative Cæsarean section, with deep and superficial silk sutures. Appropriate means were employed to restore the patient, and she recovered.

In a discussion on this case, Schmorl reported a necropsy on another, where the patient died before an operation could be performed; the hemorrhage was traced to a perforation no larger than a pin's head in a swelling on the left cornu. The gestation had not reached the second month; there was decided reaction in the ovaries and uterus. Leopold considered that these interstitial sacs occasionally developed in a diverticulum in the uterine portion of the tubal canal of the kind described by von Recklinghausen. Schmorl described a small tumor removed from the back of a uterus, which consisted of a thin wall inclosing a cystic cavity lined with uterine mucous membrane. This cyst, no doubt, developed from a diverticulum, and the implantation of an ovum was therefore quite conceivable. Kannegeisser laid more stress on the course of the tubal canal than on diverticula. As Werth had demonstrated it, it did not run straight through the middle of the muscular wall of the cornu, but made a curve with the convexity backwards. Therefore it came much closer to the uterine serosa posteriorly than anteriorly, which accounted for the fact that rupture nearly always occurred posteriorly.

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THE RELATION BETWEEN INFLAMMATORY DISEASES OF THE GALL-BLADDER AND THE VERMIFORM APPENDIX.

BY FLORENCE N. WARD, M. D.

The frequency with which I have met chronic appendicitis associated with gall-bladder disease, on opening the abdomen, has called my attention to these lesions—not only to the fact of how frequently they are associated but also to the extreme difficulty many times of making a differential diagnosis between them before the peritoneal cavity is opened. Recent surgical methods have thrown new light upon the lesions of the right upper quadrant of the abdomen, and it is now being realized the important part gall-bladder lesions play in the pathology of the peritoneal cavity and how many of the hitherto supposed gastric and intestinal diseases are found to have their origin in the gall bladder. As a result, the treatment of inflammations of the gall bladder has become in a large measure surgical, the same as lesions of the appendix. The old symptomatology of gall-stones and cholecystitis has been found incorrect and every effort is now being made toward more accurate as well as an earlier diagnosis.

In the study of the lesions of the right half of the abdomen, in women, are found the three most vulnerable points in the

peritoneal cavity, the gall bladder, the appendix, and the Fallopian tube, each peculiarly susceptible to infections and the lesions resulting therefrom. The Fallopian tube has received such careful investigation that but little more can be added to its pathology, also its relation to the appendix, so that lesions of the appendix and the gall bladder, how often they are associated and what relation they bear to one another, will only be considered in this paper.

The right upper quadrant of the abdomen has been the last part of the peritoneal cavity to be explored, and now when performing pelvic and abdominal operations, an examination of the gall bladder and ducts is considered as much a necessary routine measure as the examination of the appendix.

In the study of the gall bladder and appendix, we are struck by their many points of similarity. Both organs are the weak points in the alimentary tract by reason of their extreme susceptibility to bacterial invasion. They show a lowered resistant power, both being retrogressive or vestigial organs.

In the brilliant paper entitled "Is the Gall Bladder as Useless as it is Dangerous," by Woods Hutchinson, he shows in his studies of the comparative anatomy of the gall bladder that it is one of the most inconstant appendages of the alimentary tract; it is present in the majority of species of any given class, but at the same time its disappearance will occur in species not merely of the same class or family but even of the same genus, without any apparent ascertainable cause; for instance, it is absent in the horse, present in the cow and sheep, present in the goat, absent in the deer. Among the birds, it is present in the hawk and owl, absent in the dove family. In the giraffe sometimes present and sometimes absent.

With such a degree of inconstancy it can hardly be accorded any vital or important function, and lastly, whatever may be its function in our own species, it has been proven surgically that it can be completely dispensed with without serious or appreciable injury to the individual.

Both organs, the appendix and the gall bladder, present parallel lines in being functionless organs, both have unfortunate mechanical situations. Their distal portions are lower than their outlets and their outcurrents must move upward instead of being favored by gravity. This condition favors stagnation of fluids, presenting excellent conditions for the development

of bacterial infection, in the gall bladder resulting in the gall-stone formation, and perforation in the appendix.

By reason of its situation, being continuous with the cecum, the appendix is more prone to the virulent type of infection. It is in this part of the alimentary canal that bacterial growth is most abundant, and by simple extension, the streptococci and the colon bacilli may produce an intense type of fulminating infection.

The gall bladder, on the other hand, situated higher up in the alimentary tract, is in a part freer from bacterial growth. It is less frequently attacked by virulent organisms, the most frequent forms being the typhoid and colon bacilli. The acute attacks are, as a result, less intense in character than those involving the appendix, and by reason of the elasticity of the walls of the gall bladder it is capable of great distention before rupture, so that perforation rarely occurs in an acute attack of cholecystitis attended by gall stones or otherwise.

The far-reaching effects of complications attending the presence of gall stones or cholecystitis are much greater than in a chronic appendicitis and more apt to be progressive rather than latent.

The gall bladder acts as a barrier against infection to the liver, with its elaborate system of drainage. Should it become infected, it becomes the nidus for irritating gall stones and a tremendous menace to the whole hepatic system. Sooner or later some form of chronic obstruction occurs with resulting fistulæ, perforation and a greater or less degree of septic cholangitis. The conclusion may therefore be reached that inflammations of the gall bladder and appendix, so frequently encountered in the same individual, are not due to extension of inflammation from one organ to the other either by continuity or by lymphatic currents, but that they exist as the result of parallel conditions found in each organ, namely a similarity of function, a weakness of structure, or lack of resistance to infection and, lastly, unfortunate mechanical conditions.

With the light thrown upon the lesions of the right half of the abdomen by surgical exploration, the pathology has not only had to be remade, but the clinical manifestations have been found to be wrongly interpreted.

Before being able to make an accurate diagnosis with con-

sequent intelligent treatment, it is necessary to recognize the symptoms resulting from the inflammation in the different parts of the gall ducts and in the gall bladder. It must be remembered that pain is not a manifestation of the presence of gall stone in the gall bladder except when their presence is associated with acute or chronic infections in the gall bladder or the ducts. Jaundice is absent in from 80 to 90 per cent. of the cases.

Hypersensitiveness of the gall bladder is present in all varieties of infections and gall-bladder obstruction. Tenderness is elicited by deep palpation just below the right ninth costal cartilage or in a line from that point to the middle of Poupart's ligament, as this is the common tract of gall-bladder enlargement.

There are certain characteristic symptoms of the presence of gall stones in different parts of the hepatic tract. When in transit, in the hepatic or cystic duct, pain in majority of cases is referred to right subscapular region. Gall stones in the common duct cause symptoms of acute obstruction, jaundice, vomiting, accompanied many times by fever, pain (paroxysmal in character) radiating to the back. When the stone is movable, bile again flows, jaundice is relieved and there is a decrease of pain. In intermittent obstruction from floating stone, the pain is more severe during obstruction and greater tenderness near the median line. The diagnosis of stone in the hepatic duct is very difficult; pain is present of an irregular type, fever occasionally present, jaundice frequent, no tumor, liver frequently enlarged and generally coexisting a cholangitis.

A certain group of symptoms associated with gall stones must not be overlooked and that is the chill, fever, and sweat characteristically intermittent in character and strongly suggesting malarial infection. This group of symptoms was first known under the term "*fièvre intermittente hépatique*." It is a condition of septic absorption as the result of acute infection from the irritating presence of gall stones and bespeaks a condition of extreme gravity, requiring prompt interference to obviate the otherwise fatal culmination.

Differential Diagnosis.—In typical cases of appendicitis, but little difficulty in diagnosis is found, but in cases where the appendix is displaced upward and diseased toward the tip and where former adhesions have connected it with the upper

quadrant of the abdomen, then is difficulty encountered; there is the characteristic sign of rigidity of the right rectus muscle, difference in temperature and in radiation of pain, vomiting often reflex and the absence of jaundice. In gall-stone cases, Hoskins has pointed out the fact that at the end of 24 to 48 hours, patients will be in a better condition than one suffering from a comparable attack of appendicitis. Many authorities are now recording the frequency with which simultaneous infection of the gall bladder and the appendix is found. Oschner reports that more than 35 per cent. of his cases of gall bladder that were operated upon suffered from acute or chronic appendicitis.

Dr. Brooks Wells, Dr. J. S. Clark and Dr. Howard Kelly have all contributed valuable papers on these associated lesions. They have all come to the conclusion that an infected gall bladder is coming to be more and more feared as a possible and frequent cause of other and serious terminal infections, and that because of this fact and the small mortality following early operation, it, as well as the appendix, should be surgically treated whenever its infection is recognized.

Statistics.—Mosher's table is compiled from Johns Hopkins Hospital Bulletin and shows in this country gall stones are present in 6.94 per cent. of all people, or stated differently, one person in every fifteen has gall stones. In those afflicted death was due to their presence in 11 per cent. of cases; that is to say in every 1000 deaths 76 were attributed to gall stones.

Operative Treatment.—The evolution of the treatment of the gall-bladder lesions has proceeded exactly upon the same lines as the treatment of the appendix. We make the plea for the early operation in gall stones and for the "interval" operation exactly as we do in appendicitis. Like the "interval" operation in appendicitis, the removal of the diseased gall bladder can be performed with as much ease and celerity as the amputation of the appendix. The best results are obtained in uncomplicated and early cases,—3.5 per cent. being the mortality rate; this rate rapidly increases in encountering the complications of late and neglected cases.

As a step toward the intelligent treatment of these lesions a routine examination should be instituted in all cases where the abdomen is opened for pelvic or abdominal disease, and in all cases where the gall bladder is operated upon the ap-

pendix should be drawn up into the incision and examined as to its integrity.

The incision best suited for such purpose is the incision recommended by Albert J. Oschner through the outer edge of the right rectus abdominis muscle, beginning one inch below the costal arch and extending one and one half to three inches in length. This is the incision that best exposes the gall bladder and ducts and at the same time permits the inspection of the appendix, and can readily be enlarged for deeper exploration of the common duct or for better control of the appendix. This procedure is further aided by placing a sand bag under the patient's back in the lower dorsal region and raising the patient five or six inches in the Trendelenburg posture.

The question of drainage in gall-bladder surgery must always be answered in the affirmative; not yet do we dare close the gall bladder until the out currents have lasted long enough to wash out the debris.

The following case is reported as illustrating the difficulties in making a differential diagnosis between the lesions of the gall bladder and of the appendix, and also the ease with which a patient will bear extensive gall-bladder surgery.

CHOLECYSTOTOMY FOLLOWED BY CHOLECYSTECTOMY.

Patient, Mrs. M., age forty-five. American, married 25 years. No inherited tendencies. Menstrual history. Puberty 18th year. Menstruation every 28 days, lasting 3 days, character normal, painless. Pregnancies 6. Four full term deliveries with good recoveries. Two abortions at two months brought on by debility. Past history bears testimony to attacks of gall-stone colic at intervals during the last eleven years. History of sick headaches appearing before menstrual period for twenty years. Has a right inguinal hernia dating from childbirth 19 years ago.

Present Attack.—I was called to see the patient on December 24, 1904, and obtained the following history of the acute attack. The evening before, she had reached high above her head to put a vase upon a shelf and immediately she felt a dull sick feeling all over as though she had strained herself. About 11 p. m. she began to feel an intense pain in the right inguinal region; this grew worse and the appearance of a tumor, hard and exquisitely tender to touch, was noted. At 3 a. m. an enema was given with moderate results and no relief from pain. At 6 a. m. December 24, patient began vomiting green bitter fluid

at gradually shortening intervals, with almost unbearable pain. On examining the patient, I found the abdomen exquisitely tender to touch, more intense on the right side. On palpation, a tumor could be mapped out about the size of a small orange at McBurney's point. There was but very little tympanitis, but rigidity of the right side was well marked. An old right inguinal hernia was noted also. Temperature and pulse were normal. The patient's symptoms, however, were so urgent, the vomiting and pain both increasing that she was sent to the Sanatorium and preparations were made for immediate exploration.

Operation.—The anesthetic was given by Dr. Nelson B. Bailey, the assistants were Dr. Ida B. Cameron and Dr. Joseph Brooks. A McBurney incision was made. On opening the peritoneal cavity, the fundus of a greatly distended gall bladder presented in the incision. On being pushed aside, the appendix was found in a condition of chronic inflammation with many adhesions. The adhesions were separated and the appendix was removed at 6.30 p. m. by Fowler's method. This incision was closed at 6.53 p. m. with interrupted silkworm sutures. At 6.45 p. m. a second incision was made for the gall-bladder work parallel with the lower border of the ribs about 6 cm. from the margins. The gall bladder was found greatly enlarged and elongated. The general peritoneal cavity was walled off with gauze packing. At 7.02 the gall bladder was incised and emptied of gall stones to the number of sixty-six. They were highly polished and faceted and surrounded by mucus but no bile. At 7.20 the contracted gall bladder was stitched to the parietal layer of the abdominal wound and drained by strips of sterile gauze projecting from the wound and kept in place by catgut sutures. The abdominal wound was partly closed by interrupted silkworm gut sutures and the operation finished at 7.30 p. m.

The gall stones belonged to the class of Cholesterin-pigment stones composed largely of cholesterin, some bile pigments, principally biliverdin and a small amount of magnesia and calcium salts.

Postoperative Record.—The patient reacted well after the operation; temperature 98.6, pulse 68. The patient made an uninterrupted recovery, sitting up on the sixteenth day. The abdominal wound did not close, however, but a constant mucous discharge remained which showed no admixture of bile. There was no doubt but that an obstruction existed in the cystic duct. A secondary operation was decided upon and performed January 19, 1905.

CHOLECYSTECTOMY.

The operation was begun at 10 a. m. Exploration of gall bladder. An attempt to remove the thickened mucous mem-

brane was made, but it was found too brittle and adherent. It was then decided to remove the entire gall bladder. A stone the size of a hickory nut was found imbedded in the cystic duct. The old incision into the gall bladder was then closed with continuous catgut and the gall bladder freed from the abdominal wall; adhesions to the gall bladder were separated and the gall bladder was tied off and removed. The stump was completely closed by interrupted catgut sutures, two strips of iodoform gauze, and the incision closed by interrupted silkworm gut sutures, leaving the ends of the gauze protruding from the edge of the wound. Operation finished at 11.20 a. m. The temperature was 98.6 and the pulse 70 after the operation. The gauze packing was gradually withdrawn, and the wound allowed to close, union by first intention. The patient made a perfect recovery, sitting up on the 11th. day. The patient experienced complete relief from all her old symptoms.

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SENILE HYPERTROPHY OF THE PROSTATE GLAND.

BY E. H. LINNELL, M. D.

It is estimated that 75 per cent. of men, after the age of sixty years, have enlarged prostates. The cause of the affection is obscure. Like gray hairs and wrinkles, it is one of the accompaniments of advancing years, but all old men do not suffer in this way, so that senility alone does not account for it.

When once developed, it is an absolutely incurable affection medicinally. Surgery offers the only cure, and the modern methods of operating are so satisfactory and successful as to merit our careful consideration. The symptoms are familiar to you all: increasing frequency of urination, especially at night, with disturbed sleep, slowness in commencing to urinate and feeble stream, retention and decomposition of urine, and cystitis with more or less pain and sometimes hemorrhage, distention and hypertrophy of bladder and later atrophy, nephritis, deterioration of the general health, exhaustion and death. Usually the physician is not consulted until there is complete retention; a sudden augmentation of the difficulty, which has been gradually and almost imperceptibly increasing, and to which the patient has frequently paid no attention until, often in consequence of getting chilled, there is absolute inability to urinate, with distention of the bladder and severe pain. When once resort must be had to the catheter, it is seldom that the patient is able to discontinue its use. He may be able to urinate voluntarily, but the bladder is not thoroughly emptied, and more or less residual urine is left to undergo ammoniacal decomposition with its resulting evils. Where the catheter habit has once been established, cystitis in time results almost inevitably, despite the most careful efforts at cleanliness and sterilization. So that with or without the use of the catheter, the patient's condition is deplorable, and much suffering has to be endured, and an ultimately fatal issue is to be anticipated.

It is the physician's duty in every case to make a careful and accurate diagnosis; to give his patient most careful instruction in the use and care of the catheter, to explain the dangers attending its habitual use, to explain that surgery offers the only prospect of a radical cure, and to urge an early operation be-

fore such severe constitutional symptoms develop as to make any operation hazardous and uncertain in its results.

The diagnosis of an enlarged prostate is not difficult. In the first place it should be understood that in the large majority of cases, any persistent difficulty of urination occurring for the first time in a man upwards of fifty years of age is due to the pressure of an hypertrophied prostate gland. A digital examination per rectum enables one to easily demonstrate its existence. The organ is composed of two central lobes, separated by a commissure, forming a distinct depression or furrow. Through the isthmus, and nearer the upper than the lower surface, passes the prostatic portion of the urethra. The urethra here is horseshoe in shape, the convexity being directly upwards. The two lobes are separated more widely posteriorly than in front, giving the gland somewhat of a heart shape. The first indication of enlargement noticed by the examining finger is the obliteration of the furrow or depression between the lobes. The normal size of the gland transversely is 1 1-4 to 1 1-2 inches, antero-posteriorly, 1 3-4 inches, and vertically, in a standing position, 5-8 to 7-8 inches.

A considerable enlargement is not inconsistent with unimpaired ability to urinate, provided the growth is posteriorly. A feeling of fulness in the rectum with hemorrhoids and constipation may result without any urinary obstruction. On the other hand a trifling enlargement of the third lobe, which is not always present, but when it does exist, developing from the posterior interlobular cleft, may occasion very serious symptoms of obstruction, and yet be hardly perceptible to the examining finger. It encroaches upon the inner surface of the bladder just behind the urethral opening, and forms sometimes a tumor of considerable size, often pedunculated, and acting like a ball valve at the vesical orifice. This condition gives rise to the intermittent flow of urine and the sudden stoppage so suggestive of stone. A pouch forms behind the obstruction in which the urine accumulates and decomposes, and often concretions, phosphatic and uratic, form. Another diagnostic point is a lengthening of the urethra which always occurs with prostatic troubles. The normal male urethra measures 8 inches.

When is an operation advisable and what are the contraindications for operative procedures? It is advisable to operate

as soon as there exists continuous inability to thoroughly empty the bladder, or where the use of a catheter is necessary daily to evacuate the residual urine. Do not wait for the development of cystitis. The earlier the operation is done the better are the chances for success, and there are but few actual contraindications for operation. Marked general debility, pronounced uremic or septicemic conditions, with advanced renal degeneration, are perhaps the only actual prohibitory conditions. The mortality from operation is small, and the percentage of actual cures is large, and great relief of suffering is obtained in the large majority of cases where an actual cure does not result.

Having decided to operate we have a choice of three methods:—I shall not consider castration or vasectomy, which have been practiced with some benefit in certain instances, for they do not attack the disease directly, and are not to be compared in the results attained.

First there is the Bottini operation. This consists in cauterizing the surface of the portion of the gland that is causing the obstruction, or cutting one or more furrows into it, with the galvano-cautery knife. A delicate and complicated apparatus is needed, which must be cooled by a circulation of water to avoid injury to healthy parts, great care must be exercised that the requisite degree of heat is secured and maintained, exact technique in making the cauterizations must be observed to avoid wounding the bladder on one side, or the membranous urethra on the other. In the hands of a few very expert operators, excellent results have been attained, but it does not seem to the writer to be a procedure likely to be adopted by the generality of surgeons. The objections to be urged are the difficulty of introducing the instrument where there is marked obstruction, the danger of serious hemorrhage, either at the time of operation, or when the slough separates, the danger of retention of urine from inflammatory swelling and induration, and pyemia. In cases where a complete cure is claimed, the residual urine has rarely been entirely overcome, and the furrow burned in the gland sometimes becomes obliterated.

For these reasons a prostatectomy seems to the writer a much more desirable and more promising operation. It is a much more formidable procedure, but the mortality under modern methods is not greater if it is as great, and the success is more assured.

In order to understand the technique, a thorough knowledge of the anatomy of the gland in its relation to the bladder is most important, and I may be pardoned for briefly recalling it to your memory. The gland is surrounded by a fibrous capsule and is composed largely of muscular tissue, the glandular structure being proportionally much smaller in amount. The muscular fibers are continuous with those of the bladder posteriorly, those of the membranous urethra in front, and are intimately interwoven with those of the sphincter. The gland surrounds the prostatic urethra as before mentioned and lies directly underneath the neck of the bladder.

The third lobe, which most frequently by its enlargement produces urinary obstruction, grows backwards and upwards between the mucous membrane and the sphincter muscle, forming an elevation just behind the vesical opening where, as before mentioned, it often acts exactly like a ball valve, falling forward into the urethral opening, and completely preventing the exit of the urine, but not preventing the passage of the catheter. It also acts as a dam in front of the trigone vesicæ which comes to lie at a lower level than the outlet of the bladder, and thus a pouch is formed in which the urine accumulates and decomposes. This mode of development of the third lobe, and the relation of the prostate to the sphincter is of the utmost importance in arriving at a clear understanding of the technique of the different operations and of their comparative merits.

Having determined upon a prostatectomy two routes are open to us, the supra-pubic and the perineal. Each has its advocates, and each offers some advantages over the other.

Let us briefly study the technique of each method that we may more intelligently discuss their respective merits. In describing the perineal operation, I shall follow the method as developed and perfected by Dr. Packard of Boston, who in a paper read before the Mass. Surgical and Gynecological Society in December, 1903, reported twenty-one cases, I think, with no failures.

First the supra-pubic operation. After the usual shaving and sterilization of the parts, a rubber bag is introduced into the rectum and injected with water to raise the gland, and the bladder is injected with water. An incision is made in the median line just above the pubes, diagnosing the position of the bladder by a sound previously introduced, and keeping as close

to the pubes as possible in order not to open the peritoneal cavity, for it is to be remembered that the peritoneum is reflected over the surface of the bladder in varying extent in different individuals.

The bladder is opened over the end of the sound and its walls are scured by sutures, introduced preferably before the incision is made, and they should not include the mucous surface. These are either carried through the skin at the edges of the incision or are held by an assistant, and serve the two-fold purpose of drawing the bladder up and steadying it during the remaining procedure, and of preventing infiltration of fluids. The finger is now introduced and the incision enlarged as much as necessary. With the finger as a guide the mucous membrane over the growth is severed and the gland peeled out of its capsule or cut from its attachment with scissors, or specially designed cutting forceps. After hemorrhage has been controlled the wound in the bladder is partially closed and its edges fastened to the adjacent tissues to prevent infiltration, and the superficial wound is closed to a corresponding extent. Two large catheters are introduced for drainage and for irrigation. The irrigating fluid injected through one catheter escapes by the other. An important point, emphasized by Dr. Doughty, is to insert another small drainage tube into the vesico-pubic space. This materially aids in preventing infiltration of urine into the pelvis. It is advisable also to pass a catheter into the bladder through the urethra, and to keep it in four or five days to insure patency of the vesical orifice.

Careful attention to drainage and irrigation must be observed during the four to six weeks of healing. As the wound in the bladder contracts, a smaller drainage tube is used, and finally discontinued altogether, and irrigation practiced through the urethra until the cystitis is cured. Voluntary urination is usually restored as soon as the supra-pubic wound becomes water-tight, although in some cases, owing to long use of the catheter and organic changes in the bladder wall, the function is not regained.

Perineal prostatectomy is to be performed as follows, with the employment of instruments specially devised by Dr. Packard. A grooved staff is introduced as far as the commencement of the prostatic urethra, and with this as a guide an incision is made through the tissues of the perineum from the scrotum to

the sphincter-ani and along either side of the anus, thus forming an inverted Y. Great care must be used throughout the operation not to wound the rectum. The membranous urethra is incised along the groove in the staff. The latter is then sufficiently withdrawn to permit the introduction of an irrigator into the bladder, which is thoroughly washed; next the index finger of the left hand is introduced into the bladder and if an enlarged third lobe is found, that is smoothly excised.. The staff is then pushed on into the bladder, and with it, the prostate is pressed down into the perineal incision. Dr. Syms of New York uses for this purpose a small rubber bag attached to a handle, which he calls his rubber prostatic retractor. This is filled with water after being introduced and by its pressure also serves to control the hemorrhage resulting from severing the third lobe. The capsule is now incised and first one lobe and then the other is seized with specially devised forceps and smoothly excised. Note that there is no dragging or tearing of the tissues, and the danger of lacerating the bladder wall and the membranous urethra is avoided. If we recall the muscular connections, it is readily understood how much danger there is of such accidents where the gland is shelled or peeled out by the finger or a blunt dissector, as is done by some operators by the perineal route.

The after treatment is simpler and the recovery more rapid than by the supra-pubic route. It would seem that drainage should be more satisfactory, although this has been disputed. A drainage tube is left in the bladder for a few days and the cavity left by the removal of the gland is kept packed with gauze, and the posterior limbs of the inverted Y incision are closed with silkworm gut. The sphincter contracts closely around the drainage tube, and the urine is all carried off through it into a urinal. Any one who is familiar with the difficulty of keeping the patient and the bed clean after a supra-pubic operation will appreciate this fact. The perineal packing is removed on the fourth day and the drainage tube on the fifth, unless there be a severe cystitis, when it may be advisable to leave it in longer. After removing the original perineal packing, care must, of course, be taken to secure union of the wound from the bottom up, but the urethral wound is to be undisturbed.

The patient is usually able to control the urine almost im-

mediately after withdrawal of the drain, although naturally, when he does urinate, it escapes for a time through the wound, but it passes through the natural channel much earlier than in the other operation. It is claimed that the supra-pubic route offers a wider field for operation, especially where a stone or other complication is found, and that the prostate is more difficult to reach by the perineal incision. These objections, however, seem to me to be unimportant and the perineal route seems the ideal operation for prostatectomy, being simpler, more direct, and freer from danger at the time of operation, and from subsequent complications. The recovery is more prompt, and attended with less annoyance and discomfort than the supra-pubic route.

In conclusion it may be worth while to mention an experience I have lately had. I was consulted by a feeble old man of seventy-four years for retention. I found the bladder distended nearly to the umbilicus, and drew off two quarts of urine. It was the first time he had experienced difficulty in urinating. Careful questioning elicited a history of increasing frequency and occasional incontinence, and by the finger in the rectum, an enlarged prostate was felt. The bladder had become so gradually distended that he was unaware of it until a sudden chill produced congestion and increased swelling of the prostate, with retention. After a day or two, he was again able to urinate voluntarily, but could only partially empty the bladder, and the catheter had to be used twice daily to get rid of the residual urine. His general debility made an operation inadvisable, and also he was only visiting in Norwich, and could not remain longer than was absolutely necessary. I used daily, for about ten days, the high frequency electric current administered with a vacuum electrode per rectum. The residual urine grew less each day, and there was apparently a little shrinkage of the gland. He went home and has been able to resume his business, and writes me that he has continued to improve and that the function of the bladder has been almost wholly recovered.

I mention this case for what it is worth. Similar treatment might be of considerable benefit in the early stages of prostatic hypertrophy, and might be worthy of consideration in advanced cases as a palliative measure.

ORIFICIAL SURGERY AS A FACTOR IN MAJOR SURGERY.

BY E. H. PRATT, M. D.

Major Surgery is a great and accomplished entity. Its existence began in the dim past and its progress has been steady and substantial throughout the ages, until at the present time it ranks as one of the most substantial, scientific, successful, and reputable departments in the practice of medicine. But great as it is, and scientific as it is and honorable and hoary and time-honored as it is, it can by no means afford to be arrogant or conceited or at any time boast itself as independent of other branches of medical practice. It practically requires the employment of water, which places it under obligations to hydro-pathy; it continually makes use of a large variety of drugs, and so it is placed under obligations to drug therapy; it continually employs a large variety of manipulations, thus making practical application, in many ways, of manual therapeutics; and it is not above coquetting with electro-therapeutics. It is too material in its propensities to pay much attention to what is commonly known as suggestive therapeutics, although it is much the loser thereby. But the best friend it has ever had or ever will have as an adjuvant is Orificial Surgery, and this for the simple reason that the healing of its wounds depends upon capillary circulation and the quality of the blood, both of which are so profoundly influenced by orificial methods.

Surgeons as a class, while they are mechanical, inventive and eminently practical, at the same time are but poor philosophers, and have small inclination to recognize or ponder upon unseen forces, their scope of observation and contemplation usually being limited by the microscope and the chemical laboratory. They believe what they can see and feel and smell, but do not lend a willing ear to any other witnesses than those of sense perception. Local pathology is about as far as they care to go in their investigations, and the human body as a whole, and more particularly its indwelling and hidden forces that are the real causes of the local pathology which so monopolizes their attention, are scarcely taken into account to the extent they deserve. A large number of the greatest surgeons of the United States and some from abroad have attended these orificial

clinics in the years gone by, and in making these statements I am simply reading to you from the book of orificial history. The more accomplished in surgery the attendant upon these classes, the more he has been captivated and enthused over the surgical technique. The American and clamp operations have caught his fancy. The slit operation has astonished him a little by its audacity. The cervix and perineum operations and those upon the male sexual system have interested him slightly because of the ingenious methods of dealing with them, and the vaginal hysterectomy has impressed him profoundly. But that is all. The wonderful action of pelvic appeal upon the circulation and nutrition from head to foot has escaped his appreciation. He will amputate breasts by the dozens, but never think of examining the uterus. He will re-set joints and amputate limbs and trephine skulls and do other major operations that tax the vitality of his patients to the uttermost, and remain perfectly impervious to the fact that the healing of the very wounds that he makes is dependent upon the sympathetic nerve supply, and their failure to unite or to do well he never seems able to lay at the door of the pelvic impingement of the sympathetic terminals.

The successful orificial surgeons have been made from the ranks of the general practitioners in medicine, for these men are philosophers, thinkers, reasoners, and readily appreciate the general systemic effects of orificial work, and have made the most of their knowledge by putting into practice at once among their chronic invalids the minor types of orificial surgery that such cases usually call for. As one looks back over the list of medical men who fifteen or twenty years ago began to listen to orificial teaching and to feel their way along to its practical application in the healing of the chronically sick, he will find that the accomplished orificialists of to-day, those who have entered into the spirit of the work and comprehended its deep meaning and have grown into the full practice of all it stood for, all of these were merely medical men at the time they first entertained the orificial conception. Some of them are now at the heads of sanitariums, some of them are professors of surgery in medical colleges, some of them are wealthy and famous in their sections as a result of orificial growth and practice. They are surgeons now. For this fact, the orificial teachings are mainly responsible.

It will scarcely be necessary for me to call the attention of this latter class to the fact that orificial work is serviceable in the healing of abscesses, the closing of wounds, the reducing of inflammations and the successful conducting of surgical cases generally. But those general surgeons who have simply picked a few bits of desirable surgical procedure from orificial work, recognizing in them simply an improved method of handling the gross types of pelvic pathology, need yet to be awakened to the practicality and widespread application of the orificial thought to their general surgical work. Let me illustrate my remarks by reminding you of a few cases with which some of you, at least, are more or less familiar. Do you remember that little twelve-year-old boy who was brought to the September clinic four years ago with caries of the left femur at the juncture of the upper and middle third? The fistulous openings on the inside of the thigh had been abundant fountains of pus for five years. Three times during that time able surgeons had cut down upon the femur, scraping it and had done all in their power to cure the limb. One surgeon, recognizing it as a case of tubercular caries, advised the amputation of the limb as the only insurance against general infection. Perhaps you will remember when the case was brought before the class, the dressings were removed from the thigh and with my thumbs I squeezed fully half a teacupful of pus from the wound, and was informed that the case required a change of dressing twice daily to prevent a trickling of the pus into the boy's shoes. Ignoring the condition of the limb, however, if you will remember, we circumcised the lad, snipped the frenum, enlarged the meatus, trimmed away a few pockets and papillæ and dilated the rectum. May be not all of you remember the outcome of this case, but it was simply miraculous. This fountain of pus of five years' standing, was dried up perfectly in just five days' time. Two days later the boy went home. He took no medicine; no other treatment was given him so far as I know. In November there was a slight bulging of the scar, and the doctor who brought the case thought that the pus stream was about to run again, but upon opening it, he found nothing but a little blood serum. The wound immediately closed and the sore has never since returned, the boy having since passed on to perfect and complete recovery.

Here is another case. It occurred in Cook County Hospital.

It was a case of caries of the frontal bone of many months' standing. The pus sinuses bespattered the forehead and face. The surgeon in charge was one of the most skillful operators in the United States. He split the old man's scalp in a longitudinal direction, baring the bone over the affected area, thoroughly gouged out with a bone scoop all the affected surface, cauterized the fistulous tracts and closed the wounds. The result of the operation was nil. The trickling of the pus soon started through all of the sinuses and in spite of local dressings and internal medications; the case dragged on in exactly the same condition as before, only somewhat weaker of course, from the confinement and from the shock of the operation. A few weeks later the same surgeon repeated the operation and this time, ambitious to be still more thorough in his work, curetted the frontal bone still deeper until he exposed the dura mater of the brain in two places, each one as large as a quarter of a dollar. He then dissected out the fistulous tracts showing over the carious parts, and again closed the wound. This second operation was equally disappointing with the first, and when three months later he came under my care he was about to be assigned to the Dunning institution as an incurable. Without examining his pelvic condition, he was presented at one of the Cook County Hospital clinics as an extreme case to illustrate the power of pelvic appeal in surgical cases. Under an anesthetic, he was circumcised and the meatus enlarged and sounds passed, but on account of his weakened condition, the rectum, although exhibiting well pronounced hemorrhoids, was simply dilated and postponed to another sitting. No change whatever was made in the local attention to the head wounds, only, as the pus immediately ceased to trickle down the man's face, the head dressings were neglected for two or three days, and when they were taken off, their removal was found to be unnecessary. A few days later, however, the old gentleman caught cold and was attacked with erysipelas of the face. He was transferred to the contagious ward, and this report was presented to the class at the next clinic. At the third clinic, however, from the time of his operation, the old gentleman was ushered into the amphitheater and the turban removed from his head, when it was disclosed to the class that the case had completely recovered. He was again placed under an anesthetic and the hemorrhoids were operated upon, and he was kept in the

hospital three weeks longer until the parts were healed and in a normal state. He was then—six weeks from the time of his first operation—discharged from the hospital a perfectly well man, with the carious condition of the bone mastered, the pus sinuses all dried up and the turban removed from his head. In the same way have varicose ulcerations, osteomyelitis, arthritis, almost every variety of chronic diseases without number, goiter, enlarged lymphatic glands, and numberless other major surgical conditions found marvelously prompt and permanent cure through the agency of orificial surgery.

But, on the other hand, orificial surgery is by no means a panacea for surgical cases, and major surgical interference will still be a necessity in spite of all that orificial surgery and all other remedial measures known to doctors can accomplish. The main object of this paper is to call attention to this class of cases and most respectfully request the general surgeon that in these cases orificial consideration should be had—always, of course, with the knowledge and consent of the patient. A man with an inflamed knee may be willing to have the joint opened and the bones scraped and, however poor results may be obtained, be satisfied that the best possible has been done and that it is simply his misfortune that he must still suffer on without the expectation of recovery. It may be true that such a case possesses sufficient orificial pathology to account for his lowered vitality and poor reactive power, and if at the time the knee was operated upon his rectum and sexual system were also put in repairs, the result might have been different and a recovery secured, yet, being unconscious of any form of pelvic irritation, not being able to see any connection between his pelvic outlets and his knee, he was unwilling to submit to any pelvic interference whatsoever. Where he was sore he was willing to be cut and scraped and cauterized and otherwise treated, but where he wasn't sore he was unwilling to be meddled with. In such a case it will be the surgeon's duty to enlighten the patient to the extent of his ability, and then if the patient be too dense to take in the situation and his faith in the surgeon be too feeble to trust entirely to his judgment, the surgeon will then have the privilege of abandoning the case or exhibiting merely general surgery, thereby acceding to the wishes of his patient. But when a surgeon is not able to obtain the trust and confidence of his patient in what he proposes, the

chances are that the surgeon himself has little faith in his own plan of campaign, and when the seriously affected surgical case refuses to submit to necessary pelvic work it is probably because the surgeon in charge is himself ignorant of its great helpfulness. Orificial Surgery is the best ally and substantial friend that General Surgery was ever introduced to, but when will the eyes of the general surgeon be opened to the fact?

In one of the smaller Eastern cities there was erected a beautiful new public hospital, up-to-date in all its appointments and accommodations. An aspiring young general surgeon performed several celiotomies the first year and had the misfortune to sustain a succession of fatal results, including the whole list. These were his own cases. In a neighboring town was an orificialist who could do rectal work, repair lacerations of the cervix and perineum, but did not feel himself competent to perform celiotomies. Accordingly, he took his celiotomies to the new hospital in the adjoining town and obtained the services of the same general surgeon just referred to; but as soon as the general surgeon completed his celiotomy the orificialist took the case into his own hands and performed such orificial work as the case needed. The interesting part to you and me in this case lies in the fact that this general surgeon lost every one of his own cases which he operated upon and which did not have the benefit of orificial work, whereas every case that he operated upon for the orificialist and in which the orificialist wound up the case by exhibiting the necessary pelvic work, recovered. Hospitals are great places to compare notes, and you need not be surprised, therefore, to be informed that in that hospital the general surgeons are requested and expected to supplement their celiotomy cases, at least, with whatever pelvic work may be needed. This, however, is but one small section, and the facts which I have narrated have probably never before been made public. How long will it be before the value of performing pelvic work in connection with major surgical cases becomes universally acknowledged? Certainly not until the general surgeon becomes a philosopher as well as a mechanic and awakens to the necessity of securing a normal condition of the sympathetic nerve as an essential element to the healing of his wounds and to the prevention of his inflammations and other causes of surgical defeat.

General Surgery, white-haired and honorable: that your failures may be fewer and your successes greater, allow me to introduce to you a new helpmeet of such power and efficiency as to be of material aid in your hazardous occupation. He is truly your best and truest friend, and may the time soon come when you will recognize and honor him as such.

PROCIDENTIA RECTI: OPERATION FOR ITS RADICAL CURE.*

BY FREDERICK W. HALSEY, M. D.

Prolapse and procidentia, both from the Latin signifying a falling down, hardly allow of the differentiation which some authorities have attempted to make. Allingham for instance, confines prolapse to a falling or protrusion of a one-sided, or limited portion of the circumference of the gut. There are, however, three distinct degrees noticed. The first, where the prolapse begins at the margin of the anus and is continuous with the skin surrounding the anus. The second, where the prolapse begins an inch or two above the anus, and descends through the portion of anal bowel which remains in situ, protruding through the anus. The third, where the prolapse begins higher up, sometimes from the region of the sigmoid, extends down into the rectum, but does not protrude from the anus. These different varieties all occur, and are easy to demonstrate. The first form is seen more commonly than the others.

It is not my intention to go into the causes that lead up to this condition, causes with which you are already quite familiar, nor shall I discuss those mild cases particularly seen in children, which are susceptible of conservative treatment, or a cure by the indicated remedy. The surgical treatment of procidentia has not been attended with the most satisfactory results in the past, and it is owing to this fact that the presentation of a method somewhat new may prove of interest and provoke profitable discussion. In the more simple forms of this disease, where the protrusion occurs only on one side, or where the entire circumference of the anal margin is not involved, the relief by operation is not so difficult, and is usually attended with success. Particularly is this true if the prolapse is complicated with hemorrhoids, and mainly due to their existence. When this is found to be the case, the usual operations done for the removal of the hemorrhoids will generally suffice. Where, however, the entire circumference of the bowel is involved, and the procidentia has existed for some time, and particularly where

* Read before Massachusetts Homeopathic Medical Society.

it has reached the size of a hen's egg or larger, the protrusion being persistent, the cure becomes more difficult. Many operations have been devised and used for its relief. One of the most common has been, a narrowing of the anal outlet by excising V-shaped or elliptical portions of the mucous membrane and cellular tissue, cutting into the sphincter muscle itself, removing a portion of the same. The relief given from this operation has been very transitory, the sphincter and surrounding tissues soon stretching out as before, and allowing the relaxed bowel to press out. Another method recommended by Allingham, consists of a cauterization of the entire extruded mass with fuming nitric acid, the idea being to get up an inflammation in the sub-mucosa, thereby shortening the fibrous connection between it and the muscular coat of the bowel, and hence drawing the whole bowel up. Another and more elaborate method advocated by Van Buren, consists in burning concentric rings around the bowel, from one quarter to one-half an inch apart, down to the muscular coat of the bowel but not through it. From two to five rings are thus burned, using the thermo-cautery for the purpose. The gut is now oiled and returned to the rectum, two deep burns are now made on each side of the anal margin, rather than antero-posterior, well into the sphincter muscle. When healing takes place the bowel is supposed to be shortened by the contraction that takes place during the healing process, and the anal margin is narrowed from side to side by the healing in this direction, due to the deep cauterization of the muscle, thus offering better support to the relaxed bowel. This operation either in my own, or the hands of others, has not met with the flattering success which its originator seemed to think possible. It seems more than probable that the reason for failure in both these methods mentioned, may be due to a faulty working out of the anatomical principles involved. In the large majority of cases when prolapse takes place, it is not due to a separation of the mucous from the sub-mucous coats, or indeed a separation of any of the various coats of the bowel from each other, but rather a slipping down of the entire gut, frequently, I might say generally, dragging down the peritoneum with which it is covered higher up. The rectum, as the bowel above, we know consists of four coats, counting from within out, mucous, sub-mucous, muscular, and serous. The peritoneum invests the bowel from above down-

wards, being deflected forward and passing over the bladder a few inches above the anal outlet. The point at which this deflection occurs has been conceded by the best anatomists to be two and three-quarters inches anteriorly, and three and one-half inches posteriorly. Were it not for this peritoneal covering, and the fact of its close adhesion to the bowel, in most severe cases of prolapse, a complete amputation would be the simplest and most effectual treatment. As it is, however, if the prolapse is at all extensive, should we amputate, the peritoneal cavity would be entered by our high incision, a perfect closure is by no means sure or easy, a fatal result being invited by a failure. If this close attachment of the bowel to the peritoneum was not sufficient to disprove the theory of the separation of the varied coats of the bowel from each other, resulting in prolapse, the failure to give relief by both these operations based on this theory would certainly add strength to the argument. In no other way could we account for the good results obtained from the conservative operation for prolapse, by deep injection into the tissues of irritating fluids, like carbolic acid, particularly when the prolapse is one-sided and complicated with hemorrhoids. The operation which I wish to bring to your notice this morning, was first suggested by Dr. Geo. W. Fowler, of N. Y. It has been practiced since by other surgeons successfully. I have had several cases in my own practice, and the result has been very satisfactory. The operation has been called rectopexy, or suspension, or more properly speaking fixation of the rectum on the sacrum.

In principle it is similar to ventral fixation of the uterus. It appealed to my mind as a surgical procedure mechanically correct, and I believe it will to you. The patient being well prepared the night before operation by a thorough purge, followed by copious enema, the parts are thoroughly scrubbed, shaved, and an antiseptic dressing applied and allowed to remain over night. The patient under an anesthetic is placed on the left side, the hips being raised by a pad; the bowel, if not already out, is drawn down by an assistant and held out. A curved incision from above downward, about two and a half inches in length, is made between the coccyx and anus. This incision is carried down to the bowel proper by careful dissection, the bowel is now stripped from its attachments below the incision if there are any, and from above under the sacrum and coccyx as high as the meso-rectum, and on the side as far as the lateral ligaments. This separation can be effected by a blunt dissector, or better, by the finger of the surgeon. The

under surface of the sacrum and coccyx is now curetted lightly, though the manipulation made in dissection renders this step almost superfluous. The assistant now pushes the prolapsed bowel back through the anus and forces it out through the incision newly made. The protruding bowel is now curetted lightly, four running sutures are now taken into the bowel well into the muscular coat; but, not intending to penetrate the mucous coat, the sutures are placed at equal distances from each other, silkworm gut being the material used, and the full length of the gut is left after being placed. One of the upper sutures is now threaded with a Peasley needle and is carried through the incision under the sacrum to the upper point of the separation of the bowel, and brought through the skin outside the sacrum. The suture on the opposite side is treated in the same way. The second row of sutures are passed in a similar manner, being brought through about half an inch lower down. This is continued until all the sutures have been placed. The bowel is now returned to the rectum, and pushed up to its new position by the assistant, the operator drawing the sutures all taut, and they are tied over a good sized piece of gauze, thereby relieving the skin from too much tension. All oozing is now stopped, and the incision is closed, first with buried catgut, and then with superficial sutures. If the prolapse has existed for some time, and the sphincter muscle has become stretched, and weakened, and particularly in aged persons, an attempt is made to tone up this muscle. For this purpose a needle threaded with good-sized catgut, No. 4 or 5, is passed deeply into the muscle, and a suture taken not over a quarter of an inch long, the needle being returned to the muscle; by this procedure, a running stitch is woven into the muscle entirely encircling the anus. This suture is now drawn fairly taut over the finger of an assistant introduced into the anus and tied. Notwithstanding that no tissue has been sacrificed, this procedure is followed by good results. In one of my cases, an old lady over seventy years of age, the prolapse had so weakened and destroyed the tone of the sphincter, that under ether, the bowel having been returned to its normal position, without speculum or dilatation, the parts presented the appearance of a yawning cavern, a view of the upper curve of the rectum being possible. It can be seen at a glance that this operation, admirable as it may be, will not apply to the form of procidentia already spoken of as the third form, where the bowel drops down from above, but does not show outside the anus, or yet in cases where the prolapse comes from the sigmoid flexure or region thereof, pushing its way down and out of the anus. Here nothing but a laparotomy will suffice, the mesenteric attachment of the bowel must be drawn up and stitched to the abdominal wall.

VAGINAL HYSTERECTOMY.

BY CORA SMITH EATON, M. D.

When milder measures fail, and when the patient must face permanent invalidism from such disabilities as retroversion and prolapsus, or retroversion and small multiple fibroids, or retroflexion and ovarian disease with all their reflexes, then vaginal hysterectomy is the trump card. When electricity has removed all inflammation, and raised the vitality of the tissues to their maximum power, the patient is ready for operation.

Age is usually a factor in deciding upon this procedure. Given these conditions in young and old, vaginal hysterectomy is the remedy for the older woman, while for the younger woman ventro-suspension will give the same relief and preserve the uterine function. Either operation will permanently relieve the pressure from the displaced organ, and will permit of surgical repairs of ovaries and tubes. Yet if there is no object in saving the uterus, the patient will recuperate more quickly from the complete ablation per vaginam than from the abdominal section and uterine suspension, for she does not have to wait for the restoration of the blood and nerve supply to the long cramped uterus. In the vaginal operation, as well as in the abdominal one, the ovaries and tubes are preserved, in part or in whole, according to their state of health and promise of future good behavior. If the ovaries are left, the climacteric is not induced, and the patient has the spirit of perfect womanhood. A case in point is: Mrs. R. B., age forty, three children, all living, widow for a year, having general good health but incapacitated by impacted retroflexed uterus, lacerated and enlarged, perineum split to the rectal sphincter. Vaginal hysterectomy was done, leaving undisturbed the ovaries and tubes, all healthy. Two weeks later the perineum was repaired. In less than a year she married a widower with five children and has now for several years been a happy wife, and a kind hardworking mother to the eight children. She has sent me more patients for surgical work than any other one person, which proves how well "we are advertised by our loving friends."

Mrs. Mary S., widow, age fifty, German, mother of sixteen children, ten living, a woman who has never had a doctor in

childbirth and never had been examined until she came to me, presenting a case of severe procidentia, enlargement of uterus, with laceration of cervix and rupture of perineum. She had been helpless for nearly a year. Vaginal hysterectomy, and two weeks later, repairs of perineum, restored her to her family activities. She, too, has sent many patients to "my doctor."

Another class of cases to which this operation applies is that of uterine carcinoma. In these cases the prognosis is not so hopeful, yet it is the best available treatment for them. It promises immediate relief, prolonged life, and possibility of permanent cure. If the case is so severe when operated as to make the risk great, it is still worth while, for if success crowns our efforts it is a magical cure, and if the patient dies, the defeat is a solemn victory over pain, and the patient usually has taken the risk voluntarily.

Mrs. K., age sixty, wife of a physician, carcinoma of cervix with involvement of broad ligaments, pain and hemorrhages beginning. The patient understood the alternatives and freely took the risk. The operation was very difficult and prolonged, owing to the rigidity of all parts. Carcinomatous bunches size of filberts were found along the pelvic wall as well as in the broad ligaments. The hysterectomy was accomplished, but complete extirpation of the disease was impossible. The patient lived three days and then died with symptoms of shock and nephritis. The family realized the hopelessness of the case and would not have restored her to endure the months of suffering and the slow sure death at the end. Such cases are hard on the surgeon, however, and we would be glad to be spared the duty of operating at such risk.

A case in happy antithesis is Mrs. Henrietta W., age forty-five, patient of Dr. Margaret Koch, and operated by her, Dr. Aldrich and myself assisting. There was a large epitheliomatous ulcer involving the entire cervix. Vaginal hysterectomy was done, the tissues found so atrophic that the tubes and ovaries on both sides were torn out like so much paper, with no hemorrhage following. The patient was in extremis, and required normal salt solution by hypodermoclysis and by venous transfusion to keep her alive during the operation, but she made a perfect recovery and is now, a year and a half later, the picture of health and the most grateful of patients.

Mrs. A., age fifty, Norwegian, with mind deranged by her

sufferings, was relieved of all local pains and later of her mental aberration by vaginal hysterectomy for retroversion and subinvolution. She got out of bed and walked across the floor in the first twenty-four hours after the operation and on the third day got out again and hid under the bed, but her recovery was uninterrupted by these excursions.

Mrs. J. C. S., age forty-nine, with chronic retroversion and enlargement, unrepaired lacerations, inability to endure her marriage relation, nervousness and great oppression in head and back, made a perfect recovery after the operation and is now well and normal in marriage. Her whole family rejoice in the transformation.

A rarer condition, but one we must meet squarely when it presents itself, was that of Miss B. C., aged seventeen, demented since 2 1-2 years old from a meningitis attack. The girl had a vigorous body and strongly erotic tendencies, so that the mother was in constant fear that the child might become pregnant and asked to have the uterus and appendages removed. There was evidence of ovarian disease with violent exacerbation of symptoms at menstrual periods. The operation was done, a most difficult one, for the vagina was narrow, the uterus long and high and the broad ligaments contracted. The ovaries were cystic and enlarged, and were removed with the uterus. The patient made a good recovery, her dementia being unaffected, but the erotic tendency decidedly lessened. She was circumcised at the time of the hysterectomy.

Other cases could be cited, but these illustrate the types presented, and for such as these, our best hope is in hysterectomy by the Pratt method.



WHY SCOPOLAMINE?

BY J. W. HASSLER, M. D.

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Any number of articles have been presented, of late, in regard to the use of scopolamine hydrobromide, either alone or in combination with morphine hydrochloride or sulphate, as an anesthetic. The majority of writers present it in such a favorable light, leading the profession and laity to believe this the long looked for drug, that will give to the patient a beautiful and harmless anesthesia. Writers will say it is perfectly harmless in competent hands. In this paper it is the desire of the writer to present his observations of the drug's action and reasons why it should not be used as an anesthetic. According to the 1905 U. S. Pharmacopeia, scopolamine hydrobromide is the same chemically as hyoscyne hydrobromide, and the average dose is given as gr. 1-128. Certain pharmaceutical firms use the above names interchangeably, while others differentiate. In conversation with the chemist of a leading New York drug house, I was told of the analysis of six specimens of scopolamine procured from six firms. These analyses showed a variance in strength of each specimen, due to the presence, to a greater or less degree, of atropine. May not this be the reason why certain observers report success, and others failures, also that one will advise the lower strengths and another the higher? Physiologically scopolamine is a depressant to the centers of the brain and cord, acting as an hypnotic. The following symptoms were manifested in the 42 cases of the writer. The heart beat was at first increased and blood pressure raised, with repeated doses the heart became slowed and the pulse soft, slow and compressible. The respiration with the first dose showed no change, with repeated doses the depression was very marked. In none of the cases were the respirations above 14 to the minute, in two they were only 4 and in 7 ranged from 6 to 8 per minute. The face was at all times flushed, in 2 cases (alcoholics) a decided maroon. The pupils were dilated and non-reacting, even in those cases to which morphine was added. Certain observers report a change in the pupil with the added morphine, taking on the contracted form.

When it was necessary to give ether, there was no change in the pupil; with chloroform, a change was only noticed when the chloroform was pushed to complete narcosis. Twitching of the muscles appeared soon after the first dose, increasing in intensity after each successive dose, unless the case went into complete narcosis. Rigidity of the abdominal muscles was marked in nearly every case, necessitating the giving of a large amount of chloroform to overcome the stiffened muscle. The secretions of the salivary glands were arrested, producing a dry mouth and pharynx. In a number of cases lachrymation was absent, giving to the eyeball a hazy appearance. Vaso-dilatation was marked, and certain cases therefore had excessive hemorrhage during the operation. Cyanosis of face, hands and feet appeared in 8 cases. Susceptibility to the drug was demonstrated by 11 cases. The symptoms of these 11 cases became very alarming, necessitating stimulation. Cases of advanced age showed the more pronounced symptoms. Loud calling, to most of the cases, would cause them to raise their eyelids, showing the brain still received impressions. When the face or neck was pinched by a sharp instrument, the patients moved their head or raised their hands in protestation, though manifesting a loss of co-ordination as to the site of the pain. Scopolamine was administered in doses of gr. 1-100 in 34 cases, 5 received gr. 1-64, 3 received gr. 1-95. To the cases to which morphine was also given gr. 1-6 was the amount used.

In the majority of cases Koroff's periods of administration were adhered to, 2 1-12, 1 1-2 and a 1-2 hour before the operations; if gr. 11-64 was the dose, the period was 1 hour before operation; if gr. 1-75, repeated doses an hour apart. It was found necessary to administer a general anesthetic in 38 of the cases, the patient moving when irritation was applied. A certain observer argued there could not have been any pain to cause the patient to move, because the patient, on returning to consciousness, said he had felt no pain; arguing, I presume, along the same lines, that when a falling tree strikes the ground, and there is no ear to hear it, therefore there is no sound. Scientifically this is a truth. What cares the operator for such scientific truths? He observes the moving about when irritation is applied, and he knows the sympathetic brain is receiving impressions and he knows that as long as these impressions are received the patient will move and the operation be made im-

possible. Ether or chloroform were given in the same number of cases, 19 each. It is claimed that only a small amount of a general anesthetic is demanded when scopolamine is given. This is true, also is it true, that with the to-day mode of administration of general anesthetics, very little is demanded. This fact is not true in abdominal cases, when scopolamine has been used, for more than the ordinary amount of chloroform was necessary to overcome the rigid abdominal muscles. The stage of excitement was lessened in those cases addicted to alcohol, being about as usual in the ordinary run of cases. Vomiting occurred in all but three of the cases to which morphine combined with scopolamine was given. With scopolamine alone, only five cases vomited. Profound sleep, lasting from one to four hours, occurred in 95 per cent. This sleep is referred to by certain writers, as natural. To me it appeared more like a coma. Is coma natural or physiological? It is claimed that there are certain advantages and disadvantages in the use of scopolamine.

The writer will relate these advantages in the form of questions, presenting his views in the shape of answers. I. Is it harmless? I believe this is true when given for therapeutic reasons and in the dose of gr. 1-128. No deaths have been reported when so administered, but when given as an anesthetic in small or large doses, let us see what has been the record. De Maurans (*Semaine medicale*) reports 12 deaths. Landon (*Deutsche medizinische Wochenschrift*) reports 12 deaths. M. G. Bardet (*Bulletin general de Therapeutique*) reports 2 deaths. I have misplaced the report of 22 deaths, gathered by a German observer, in which he adds, "How many deaths attributed to other causes, were most undoubtedly due to scopolamine"? La Place (*N. Y. Medical Journal*) says, when on a visit to Paris and Germany, he had been discouraged as to the uses of scopolamine. So many favorable reports by the American physicians leads one to believe, that either they are not reporting correctly or have improved upon the methods of our European collaborators.

2. Does scopolamine, as an adjuvant, necessitate giving less of a general anesthetic? Cases are reported to which one and two ounces of chloroform to the hour was necessary, in abdominal operations with rigid abdominal muscles. But these were cases to which only 3 drams to the hour were given. Let us see what has been accomplished in the way of general

anesthesia, without the use of adjuvants. Chloroform combined with oxygen, when administered by the closed inhaler (Northrop) seldom exceeds 3 to 4 drams to the hour. Chloroform when given by the open method (Esmarch inhaler) never reaches one ounce an hour, unless incompetent physicians should attempt the administration. Ether when given by the open inhaler (Allis) averages five ounces to the hour. With this method a large amount is lost by evaporation. Nitrous oxide as the primary anesthetic and ether, by the closed inhaler (Hassler and others), averages only 3 to 3 1-2 ounces to the hour of ether. Drs. Buchanan, Hartley and Bennett have verified the above statement and have frequently so reported.

3. Is the stage of excitement less when scopolamine is given primary to the administration of the general anesthetic? It is the exception to-day to have our cases show any degree of excitement, the exception being usually in persons addicted to the use of alcoholic drinks. Rarely do we have excitement with the nitrous oxide and ether and the chloroform and oxygen combinations. This stage can be greatly eliminated, even with the Allis inhaler, if the anesthetist will adhere to the drop method of administration and a surrounding atmosphere of quietness in the administration room is compelled.

4. Is the sleep natural? J. V. Shoemaker (N. Y. Medical Journal) and others report this sleep, instead of being natural, is like coma.

5. Do we have any less nausea and vomiting? One man reports 50 per cent. of his cases vomited. Others that vomiting is rare. Two years ago I reported statistically that 96 per cent. of my cases vomited, since that time the percentage is less, due to the giving of nitrous oxide as a primary anesthetic. T. D. Luke (Edinburgh Medical Journal) reports that vomiting occurs in a very limited number of cases at the present day with a general anesthetic. When it occurs with ether, it comes on early and is of short duration, frequently before the patient has recovered sufficiently from the anesthetic, therefore not knowing of its occurrence. If chloroform is the anesthetic and the patient should vomit, it will appear later and remain longer. In operative cases, vomiting is frequently from a reflex cause, as a gauze pack or drain placed in the upper segment of the abdominal cavity; the same is true of the uterus, vagina and rectum if packed or drained.

6. Is the slow respiration natural? I answer by asking, Is a respiration of two to fourteen to the minute natural and beneficial?

7. Is the fact, that there is a decrease in the amount of mucus, of much consequence? The greater number of cases, with a general anesthetic, do not have an increase of buccal mucus. If it does occur it is easily taken care of. There is a possibility that inhalation pneumonia may supervene upon the inhalation of mucus that has become infected, but is only a possibility. The writer probably has been fortunate in not meeting with such a complication in nearly 8000 anesthetics. Dr. Bartlett reported a year ago as having had two such cases following anesthesia. The fact that scopolamine acts as it does so markedly upon the pharynx and larynx would seem a possible contra-indication to its use in throat operation. One writer so reports.

There seems to be no division of opinion in regard to the disadvantages of scopolamine. The following are those claimed.

1. Variety of action. Due to the variance in the drug and susceptibility of the case.

2. Variability of reaction in cases.

3. Vaso-dilatation, thereby causing excessive hemorrhage during the operation. This condition is annoying as it necessitates the use of a large number of hemostats. The time employed to perfect hemostasis lengthens the operation, usually a condition the operator attempts to avoid. Ergot has been suggested to prevent the vaso-dilatation, again adding another drug.

4. Muscular rigidity of the abdominal muscles. As mentioned before, this necessitated the giving of a large amount of chloroform. Wood (*American Medicine*) says scopolamine is contra-indicated in acute affections of the pharynx and larynx, also in edema of the lungs. He also reports a few deaths. Hayen says cases of heart disease and nephritis contra-indicate it. Certain other observers say it is not contra-indicated in heart lesions.

Mary K. Isham (*N. Y. Medical Journal*) reports a case developing albumen and casts, following the use of scopolamine. The case died. Dr. Isham is favorably impressed with scopolamine, on account of the number of successful cases she has had.

In France Drs. Ferries and Desjardins report 100 cases; seventy-four necessitating a general anesthetic. The latest reports from France discredit the drug, and its former devotees are advising against its use.

Drs. E. R. Gregg, Pittsburg; W. W. Babcock, and A. C. Wood, Philadelphia; and M. K. Isham, Cincinnati, have reported favorably and advise its use in selected cases. At the meetings of a number of medical societies, gleaned from medical journals, the consensus of opinions is decidedly against the use of scopolamine as an anesthetic. Anesthetists have proclaimed against it, and we fail to see where we are benefiting our cases. The most ardent of devotees claim scopolamine is applicable to only selected cases. What cases are these? Why waste time experimenting with a drug that has so many limitations. To date the mortality rate is too high—can we conscientiously jeopardize our cases to this drug, when the general anesthetics have only a mortality rate of 1 in 20,000 with the most dangerous, chloroform? Scopolamine has at least 4 in 300 if not more, if we knew the full truth. Should we administer a drug, which we know is so uncertain in quantity? An editorial in the N. Y. Medical Journal fully coincides with the writer's views. "Why initiate an ancient and clumsy method of anesthetization, with a drug that is so dangerous and treacherous?"

The treatment for scopolamine poisoning has not been touched upon in any of the articles that the writer has been privileged to read. I deem it of the utmost importance. The same treatment is recommended for hyoscine poisoning as is prescribed for atropine poisoning. This includes the giving of opium or its alkaloids. Would this be a sane prescription from the fact that morphine is synergistic with scopolamine? In the case of scopolamine the diffusable stimulants are called for, as nitro-glycerine, strychnine and caffeine, aided by oxygen, electricity and artificial respiration. The time has not yet arrived when we can replace ether and chloroform as anesthetics, although the medical world is constantly on the lookout for such a drug or drugs that will give to the case even a better anesthesia than we find by ether or chloroform. A few years ago, it was thought that the long looked for method of anesthetization favorable to the patient had at last been discovered in spinal anesthesia. Soon recognized as insufficient and harmful, it was passed up. Ultimately this will be the fate of scopolamine hydrobromide.

THE DIAGNOSIS AND SURGICAL TREATMENT OF ULCER OF THE STOMACH.

BY NEWTON M. COLLINS, M. D.

With each succeeding year we see new fields of conquest open to the surgeon. Surgery of the stomach is now beginning to receive the well-deserved attention its importance demands.

Although the diagnosis and treatment of ulcer of the stomach, naturally first comes to the notice of the physician, the time has not passed when the surgeon can rest content to assume the responsibility of possible error, in lieu of a false diagnosis of ulcer of the stomach, therefore it is essential for him to be thoroughly versed in the diagnosis of this affection.

The well-known symptoms of pain after the ingestion of food, and epigastric tenderness, and burning at end of ensiform cartilage, with vomiting and bleeding, as shown by hematemesis and melæna, are usually sufficiently characteristic for a diagnosis of gastric ulcer, yet it must be borne in mind that bleeding and vomiting may both be absent, and only painful indigestion and tenderness be noticed.

Hematemesis is probably the most characteristic sign of ulcer. It occurs in from fifty to eighty per cent. of all cases. The amount of blood vomited does not give a correct impression of the degree of hemorrhage because a considerable quantity may reach the intestines and be passed as tarry stools. When small quantities of blood escape into the stomach, they mix with the stomach contents, are partially digested, and eventually are vomited in the form of coffee-ground material. When larger vessels are eroded we have copious hemorrhages of dark red pure blood. Such gastric hemorrhages are accompanied by the systemic phenomena of internal hemorrhages, as in any part of the body.

It might be well to point out here as bearing on the site of the ulcer, the importance of the character, and site of the pain, which is usually definitely localized, and associated with tenderness on pressure. The tender area is in the upper abdominal region, the exact location being determined by the site of the ulcer; for example, an ulcer in the anterior wall at the cardiac end of the stomach, is usually associated with tenderness between the left costal arch and the mid-line, and the pain

is relieved by dorsal decubitus, but if the pylorus is involved, the pain is between mid-line and right costal arch, and is relieved by lying on the left side, and aggravated by turning to the right. An ulcer of posterior wall, gives rise to less epigastric tenderness than one on the anterior, and the pain is felt more in the back, beneath the left scapula, and is relieved by sitting erect, bending forward, and aggravated by dorsal decubitus. An ulcer close to the cardiac end, causes pain soon after ingestion of food, while ulcer near pylorus, does not cause pain, according to some authorities, for one or two hours after its ingestion.

The laboratory findings of stomach contents may be an aid to diagnosis, but have not proven of as great service as was hoped. Hyperchlorhydria, due to an exhaustion of the gastric glands, by a continued irritation, is usually found.

The Mayes, after many hundred examinations that were followed by operations, say that hyperacidity is usually found in gastric ulcer, and a lack of hydrochloric acid indicates carcinoma, but when the latter is found, it is too late to operate. They do not lay very much stress on laboratory findings.

Such are the principal symptoms of an acute ulcer, and with a modification of degree of those already given, are those of chronic form. It is of the latter form, and the results of its many complications, with which the surgeon will be obliged to cope, as it is not likely that the patient will fall into his hands until the ulcer has reached the chronic state, except an acute perforation has occurred, demanding surgical interference.

It may be necessary for the surgeon to make a differentiating diagnosis between ulcer of the stomach and gastralgia, hepatic colic, cancer of the stomach, chronic gastritis, and duodenal ulcer, any one of which may sometimes simulate it.

Gastralgia.—The pains in gastralgia are more apt to come when the stomach is empty, food usually gives relief for a time, while in gastric ulcer pain ceases as soon as the stomach is empty. There is no blood in the vomit from gastralgia, as there is in gastric ulcer. Circumscribed tenderness is absent in gastralgia, and is nearly always present in gastric ulcer.

Hepatic Colic.—The pains are more severe in this condition, and are usually followed by more or less jaundice. There is usually pain under the right shoulder blade. If deep pressure beneath the rib border on the right side cause pain, during

forced respiration, it is probable that the trouble originates in the biliary ducts.

Carcinoma or Cancer of the Stomach.—The age of the patient is often of aid in differentiating these two diseases. Cancer of the stomach usually comes after forty years of age, while gastric ulcer appears in women from twenty to thirty years of age, and men from thirty to forty. In cancer the laboratory findings may be of service, as we will find a diminution or lack entirely of hydrochloric acid, lactic acid present, and Klebs-Boas bacillus, while in gastric ulcer we find an excess of hydrochloric acid and the absence of lactic acid and the bacillus. When a cancer is formed on an old ulcer base the hydrochloric acid may be in excess.

Chronic Gastritis.—In this the pain is less severe than in gastric ulcer, and the vomitus seldom contains blood. The pain is more diffused, hydrochloric acid is diminished or even absent.

Duodenal Ulcer.—The differentiation between gastric ulcer and duodenal ulcer is more difficult. The circumscribed tenderness is possibly a little more to the right and lower down. The stools are tarry in duodenal ulcer.

The treatment of gastric ulcer is at first essentially medical, and the best authorities now agree that from four to six weeks of thorough treatment by rest of stomach, with at least the first week or two spent in bed, with patient nourished by nutritive enemata, every six or seven hours, with daily stomach washings if much mucus present, then slowly and cautiously returning to stomach nutrition, giving at first koumiss, milk and vichy, egg water or barley water, and gradually substituting semi-solid light foods for a few weeks, should and does cure all cases curable without surgical methods. After gastric ulceration has persisted for more than six weeks under the foregoing treatment, the case should, in my judgment, be considered surgical, and an operation be resorted to before the development of complications and before the patient has become so emaciated and broken down as to render surgical procedure hazardous.

In considering the surgical treatment of gastric ulcer, we will be obliged to treat not alone the ulcer but the manifold complications and sequelæ it has occasioned. Among these may be mentioned: (1) Perforation of stomach wall and peritonitis,

(2) cicatricial stenosis of the pylorus (the normal pylorus readily admitting the index finger), (3) tumor of stomach or pylorus of inflammatory origin, (4) ulcer, carcinomatous (some writers hold that cancers of the stomach owe their origin to a previous laceration, others that sixty per cent. give a previous history of gastric ulcer), (5) dilatation due to obstruction, (6) fistula between the stomach or pylorus with some other organ. or surface of the body, (7) adhesions, (8) stenosis of cardiac orifice.

Right here it might be well to contrast the mortality of ulcer treated by medical methods alone with those treated by surgical and medical combined. That of the former is set down as from twenty per cent. to fifty per cent., while of the latter five per cent. or even less. Hence the excuse of a few years ago, that there is a greater responsibility in recommending surgical treatment, either from the uncertainties of diagnosis or risk of operation, has no foundation in fact. It would be interesting to trace the development of gastric surgery, but time does not permit. Each case must be individualized as to method of surgical treatment, which is generally not discovered until the abdomen is opened and the complications of the case are shown.

Immobilization and draining the stomach is the only rational treatment, and has proven successful in such a large number of cases that its adoption should be the rule and not the exception, as it has been in the past.

There are two adoptable methods in vogue at present, and the indications seem to be pretty generally agreed upon by those that have had much experience in dealing with these cases, viz., pyloroplasty, where the pylorus is not very adherent and the stomach not very much dilated, and gastroenterostomy, wherever either of the above conditions exists.

It is useless here to go into the history of these operations except to say that pyloroplasty has grown from the former method of Heineke-Mickelicz, that simply enlarged the outlet by dividing it longitudinally and closing it together vertically, to the present method of Finney, which enlarges the stomach by sewing the duodenum to it and incising both just outside of the stitches, after which the stump is pushed back and the outside edges united in such a way that it makes the opening from the stomach the full size of the duodenum, and at the most de-

pendent point, that is at the lower right-hand corner, instead of at the upper right-hand corner. This, as you can readily understand, allows the food with the gastric juice to pass on into the small intestines, where it is digested without the least trouble. The free opening thus produced does away with the effort of forcing the contents uphill and through such a small opening. It is that which prevents the ulcers from healing. You can readily infer that the operation immobilizes, or, as Van Lennep has well expressed it, "splints the stomach," and allows the ulcers to heal, as they evidently do, for hemorrhages cease and food immediately digests and is assimilated.

A gastroenterostomy accomplishes the same; and is even a better method in cases where the stomach is badly dilated and the pylorus firmly adherent, so that its separation from the surrounding parts would cause too much traumatism.

The posterior operation is the one preferred, the posterior wall of the stomach being united at the first part of the jejunum by two rows of continuous suture.

Perforation of the stomach occurs in about six per cent. of all these cases, and demands immediate surgical treatment. The symptoms of this dread complication are those of the rupture of any internal viscus. If the perforation is small the rent in the gastric wall may be closed by a purse-string suture, but if it is large it is best to resort to a double row of continuous sutures, followed by a careful abdominal toilet.

An operation for gastric ulceration must not be considered the end of all treatment; it must be looked upon but as an incident in the correction of a chronic condition. The patient must be under the constant observation of his surgeon, before resuming his ordinary modes of life. He must be advised as to his diet, that he will eat only those articles of food that are easy of digestion and suitable for the proper nourishment of his body. His anemia must be corrected by proper hematinic remedies. His teeth and mouth should be looked after by a competent dentist, to see that oral sepsis is absent, for some authorities hold that gastric ulceration is due to sepsis derived from an uncleanly mouth. His whole mode of living should be such as to prevent any subsequent formation of ulceration.

The day is not far off when our physicians, appreciating the great difference between the mortality of cases of gastric ulceration treated by medical methods alone and those treated by medical and surgical methods combined, and realizing the great difficulty they have encountered in treating these cases medically, will turn such cases over to the surgeon in the hope that surgery will come to their aid. I believe we will all see the day when an early operation in gastric ulceration will be the watchword as it is to-day with appendicular inflammation, and great will be the boon to suffering humanity.

ON LOCAL ANALGESIA.

BY ARTHUR E. BARKER, M. D.

So many inquiries have reached me in regard to the method I occasionally employ for the production of local analgesia, and these are so difficult to answer offhand, that it appears desirable to publish the newest experiences in this field. My own part in formulating the method has been a modest one, and yet many who have either used local analgesia themselves, or have seen it employed by others, state that my results are in most respects far more complete than they have obtained or seen elsewhere. If this be so, the reason is not far to seek. There are, scattered through the literature of local analgesia in different countries, many most interesting observations—*anatomical, chemical, pharmacological, physiological, and clinical*—bearing on the subject. Some of these have apparently escaped the notice of those who have practiced local analgesia, or have not, perhaps, been fully appreciated. I have merely studied these, tested those which required it, by careful experiment, and endeavored to combine them all into a simple clinical procedure embodying their good points. This has resulted in the formulation of a procedure which, I venture to think, is an addition of some importance to surgery.

To obtain the best results from the injection of β eucaine many facts have to be kept in memory, although this drug is the only local analgesic employed in the method under consideration. We have first the discovery by Corning that cocaine applied to the trunk of a sensory or mixed nerve abolished sensation throughout the whole distribution of the same. The practical significance of this last fact is still, apparently, not fully realized by many who try to carry out the procedure in question. Schleich, who undoubtedly did much to popularize local analgesia, gave it too little weight in his rather cumbrous procedure. But later Cushing gave it its full value in his very interesting observations. Of equal importance was the discovery of Oberst, that if the circulation of a part was retarded by a ligature or the application of cold, the action of the analgesic compound injected into it was maintained, and even intensified, so long as the circulation was controlled or retarded.

Based upon these observations, the employment of local analgesia has grown considerably during the last few years, and has improved in proportion to the full recognition of the importance of each. But its employment has been limited by two considerations. First, by the fear of the toxic effects of cocaine, which restricted the use of this drug to small quantities over comparatively narrow fields of operation; and, secondly, the relatively short analgesia in those parts of the body where Oberst's method of restraining the circulation by band could not be applied. But the discovery of β eucaïne, which is far less dangerous than cocaine, while possessing analgesic properties little, if at all, inferior to it, has removed the first of these objections, while Braun's suggestion of the concurrent use of adrenalin for the purpose of securing a retardation of the circulation equivalent to Oberst's constriction of the part, has removed some of the objections, both as to the duration of the analgesia, the extent of the area which can be dealt with, and the amount of the toxic drug to be employed.

It is now well known that adrenalin possesses the property of constricting the smaller vessels of a part into which it is injected. Such a part is seen to be blanched and anemic, as though emptied of blood by constriction or cold. Now, when adrenalin, combined with β eucaïne, is injected, several very notable effects are produced. By the retardation of the blood flow the eucaïne remains in the area injected, and is not washed away at once by the blood stream into the general circulation. From this, it follows that its effects on the nerves of the part are intensified and prolonged to a large extent; and, therefore, if combined with adrenalin, less of the drug is required to produce a full effect. Moreover, as it is thus retained in the tissues locally for a long time, often hours, it only reaches the circulation, and through it the higher nerve centers very slowly, if it ever reaches them at all in the form of β eucaïne. For there is reason to believe that before it is parted with by the local tissue elements it is altered in their protoplasm into other compounds, innocuous to the nerve centers. At any rate, it has been found experimentally that a dose of cocaine capable of rapidly killing an animal if injected alone, is quite harmless if combined with adrenalin.

A knowledge of these facts enables us on the one hand to

employ less of the drug when adrenalin is added, seeing that its analgesic action is thereby intensified, and on the other justifies us in increasing the area of injection, and, if necessary, the amount of eucaïne, seeing that its general toxic effects are restrained or abolished. As a matter of fact, I have several times injected more than 6 gr. of β eucaïne combined with adrenalin in adults where large areas had to be dealt with, no ill effects being noted. Of course it is necessary to be very careful with a new drug, and I prefer to regard 6 gr. as the maximum, especially as in practice it suffices for the largest operations. To utilize these data in clinical work we have to keep in view several questions.

1. How to reach on the proximal side of our area of operation the nerve branches supplying it, and how to saturate them as far as possible with the solution containing the drugs mentioned.

2. How far can we dilute the latter so as (without forfeiting their potency) to have enough of the medium to carry the active agents to all the parts required, even if extensive.

3. How to maintain the analgesia long enough for any ordinary operation without being obliged to infiltrate further, as in the older methods.

1. The first of these questions is mainly an anatomical one, best met by considering the course and distribution of all the possible nerves which supply a part. There are, of course, gaps in our knowledge of the ultimate distribution of many nerves, notably of those supplying the parietal peritoneum; but these are being steadily filled up by the anatomists.

In reaching the nerves of a part, hollow needles of varying length are thrust into their immediate neighborhood or across their course at some distance from the area of operation, and thus the fluid injected through them is carried as near to them as possible. We can also make use of fascial planes and areolar spaces, along which the fluid will pass easily. For instance, in removing the vermiform appendix in the stage of quiescence we have to deal with the skin, muscles, parietal peritoneum, and its reflection to form the mesenterium of the vermiform appendix. To render the skin and areolar tissues insensitive is a simple matter. We have only to inject a somewhat larger area of these than we are likely to cut (= local analgesia). The muscles are not quite so easily dealt with.

Here we enter a very long, blunt, hollow needle through the skin already infiltrated about two inches outside the line of incision at its lower end and push it slowly upwards between the layers of the muscles, injecting slowly as we go, until we have nearly reached the costal margin and used 10 c. cm. of fluid. From the upper end, in the same line, the needle is now pushed downwards through the deeper layers as near the peritoneum as possible, using another 10 c. cm. We thus cross the line of the nerves supplying both muscles and peritoneum (Ramström). In some cases I have injected the subperitoneal tissues underneath the cecum and appendix, either from above the iliac crest or from below Poupart's ligament, just inside the anterior iliac spine. I had done this previously on the cadaver with blue injecting fluid, and been surprised at the way the fluid spread along the iliac fossa.

This is simply an illustration of how the nerves of a part can be reached ("regional analgesia"). For the groin, no better guide can be taken than some diagrams published à propos of the subject by Cushing. These are especially valuable for radical cure of hernia and for the removal of the testicle, of which I have had several cases in markedly phthisical patients, whose lungs would hardly have tolerated either chloroform or ether.

As to abdominal organs, it appears almost certain that they are *per se* insensitive to pain so far as they are independent of the parietal peritoneum in any of its reflections. For instance, I have watched a patient's face while inserting a trochar in several directions deeply into the liver, and it showed complete indifference. When asked, he stated that he felt nothing. The incision through the abdominal wall had been previously made under eucaïne. Again, I have several times divided the vermiform appendix with the actual cautery without pain, though the analgesic fluid had only been applied for the parietes. But a drag on the mesenterium or on adhesions about the vermiform appendix is felt as griping, unless the injection have reached them.

It is plain, then, that our injection must in every case be carried out with special reference to the nerves of the part (regional analgesia).

2. The strength of the β eucaïne solution has only been settled after much practical experience. We must, on the one

hand, keep within the safe dose of the drugs, and on the other have at our disposal a large enough quantity of the fluid medium to render it possible to spread the analgesic agents over large areas. If we suppose 6 gr. of β eucaïne to be about the full dose when combined with adrenalin, a good deal of fluid will be required. My own experience (now a long one) leads me to the conclusion that for ordinary surgical work the following solution answers well:

Distilled water.....	100	c. cm.= 3½ oz.
β eucaïne	0.2	gram= 3 grains
Sodium chloride.....	0.8	gram=12 grains
1 pro mille adrenalin chloride solution..		mxx

The actual strength of adrenalin in this solution is one in two hundred thousand (1:200,000).

All this quantity of fluid can be used in an ordinary case if necessary, and it is quite sufficient for most. But I have often injected twice as much when large areas had to be dealt with, and have seen no ill results from the six grains of eucaïne or mxx of adrenalin. The latter amount corresponds to just about 1 mg. of adrenalin, namely mxx=circa 1 c. cm. of 1 pro mille solution.

I have also used 4 grains β eucaïne to 100 c. cm., but noted no appreciable increase of analgesia.

I have made several observations on this fluid with Beckmann's apparatus to prove its osmotic tension, and found that it is as nearly as possible isotonic with the blood. If not isotonic such a solution would produce pain on injection, and might also lead to necrosis of the tissues into which it was injected. This was actually the case in the practice of a friend of mine, who used 2 per cent. of eucaïne simply dissolved in boiled water without any addition of sodium chloride. The analgesia was excellent, he told me, but necrosis of the injected tissue followed. To test the osmotic tension of a 2 per cent. of β eucaïne alone I froze it in the Beckmann's apparatus and showed him that it registered—0.28 C. as against human blood—0.56 C. Hence his trouble.

With the solution given above we have never seen the slightest sign of loss of vitality. In short it was "isotonic" and "indifferent" to the tissues. It is very easily made. In a Jena glass beaker, or 7 oz. wide-mouthed flask, into which a

syringe will go, $3\frac{1}{2}$ oz. (=100 c. cm.) of distilled water is put and boiled. To this is added a powder containing the β eucaine 3 gr. and pure sodium chloride 12 gr. After a couple of minutes' boiling it can be let cool to blood heat, or cooled by standing the flask in cold water. Then 10 drops of the 1 per thousand adrenalin chloride solution of commerce is added, and the solution is ready for use.

The adrenalin solution is best measured by drops from the bottle itself with a loosened stopper. Other ways of measuring are wasteful, and above all expose the fluid to air and light which soon spoil it, and to septic contamination of the whole bottle, which would be dangerous. If it is dropped as described, and the stopper refastened, the fluid in the bottle will keep good for months in my experience, if left besides in its box in the dark. I have often tested these drops with a standard measure, and find about 18 or 20 go to the cubic centimeter. Adrenalin solution should not require boiling. It is already sterile or will not keep. I have sometimes put the drops into the solution while boiling and found that this did not destroy its specific properties, but they seemed to pass off more rapidly than when the drops were added from the bottle direct to the solution at blood heat. Any alkali spoils it at once, hence the Jena glass. The syringes must of course be boiled, but not in the usual soda solutions, for the same reason. The needles are best sterilized in alcohol. The ordinary Freienstein's needles fitted into fine caps screwed on to hollow rods answer all the purposes of limited injections, the finest size being used for the skin, the larger for moderate depths of tissue. But where greater distances have to be reached—for example, the whole length of the inguinal canal—a longer needle is necessary. For this I have devised a needle which, so far, answers all purposes. Two sizes 1 mm. and $\frac{1}{2}$ mm. thick—are used. Each is five inches long. As such a length of fine steel tubing is very flexible and difficult to force through the tissues, especially if blunt (as it should be to avoid injury to vessels), it is so arranged by a little device of my own that it can be set to begin with at a short length until it has entered the tissues, when it can be lengthened up to $4\frac{1}{2}$ in. This is provided for as follows: Each needle is a plain, straight, fine tube slightly beveled at the distal end or closed blunt with a lateral opening. It is passed through the lumen of a small section of $\frac{1}{8}$ in. of

the finest rubber catheter. This little rubber collar just fits into the screw-cap, which is then screwed up on the straight rod into which the needle runs, the other end of which fits on the syringe. When the cap is screwed down on the rubber, the needle is fixed watertight. When it is unscrewed a turn or two, the needle can be drawn out of the hollow rod or pushed in and again fixed. All these needles should be washed in plain hot water after use, to remove the salt solution, and then be washed in spirit, their stylets being finally replaced in them. The rubber cap should also be removed from them, as it spoils the metal if left long in contact with its bright surface. When thrusting these blunt needles through the skin, it is well to prepare the way by a puncture with a large sharp-edged needle through the spot previously anesthetized by the fine needle of the first injection.

3. The duration of the insensibility is secured by the admixture of the adrenalin. Without it sensation is only abolished by eucaïne for about fifteen minutes, with it for three or four hours—that is, as long as the anemia lasts. But, on the other hand, the analgesia is produced more slowly when adrenalin is employed with the eucaïne. It is therefore well, before all larger operations, to wait some thirty minutes after injection, to allow time for the insensibility to become fully developed. After this the effect appears to deepen for a couple of hours. In one case of operation for a recurrence in the breast involving the removal of a mass of skin as big as half my hand, I had injected two and a half hours before. Sensation was still absolutely abolished, the patient spontaneously expressing her wonder and delight that she had felt no pain at all. She made an interesting remark besides—that is, that she could tell when a knife was used and when a needle by the touch, but both were absolutely painless. Others have said the same, showing it is not anesthesia but analgesia. Waiting for half an hour or so may sometimes be inconvenient unless the time be utilized for preparation of instruments, etc. In hospital it gives little trouble. Three or four cases can be infiltrated at once, or one after the other, and left in the wards while some other operation requiring general anesthesia is done. They can then come in in succession.

Waiting has another advantage which places this above the earlier methods of repeated infiltration of eucaïne alone. When

the latter is employed the operation must be practically done at once. It will then be found that the tissues are still in a state of artificial edema from the amount of fluid injected. This edema may mask the anatomical details unpleasantly for beginners. When, on the other hand, adrenalin has been added to the eucaine solution, and we have waited, say, forty minutes, the artificial edema has disappeared, and we cut through pale and almost bloodless tissues, where the details are very clearly seen. Rapid injection is to be avoided; the sudden distention of the tissues is disagreeable if not painful. The fluid should not be allowed to become cold or be used too hot, for the same reason. These and other small details will soon be learned by anyone who is in earnest and patient.

Of course all dragging on the parts is to be avoided, lest structures be pulled upon which lie beyond the area of infiltration. This is the crux of abdominal operations. The parietes can easily be rendered insensitive to pain over a large area. But if the hand has to be introduced it will in many cases reach beyond this area and so produce pain, for the parietal peritoneum is particularly sensitive (Lennander, Dogiel, Ramström). Again, in handling the intestines (themselves insensitive), say, in a colotomy, one must be careful not to drag on the mesentery, which has the reflections of the parietal peritoneum at its root. For these reasons, at all events, for the present, it appears undesirable to employ this method alone for the longer operations on the abdomen where dragging to some extent is unavoidable. But in such cases the prolonged use of the general anesthetic can be much curtailed by the previous injection of the tissues by this method. Then the abdomen can be opened, and when the patients begin to feel pain chloroform can be given perhaps only for a few minutes, until any dragging manipulations are over. Then the chloroform can be at once stopped and the tedious stitching, whether of the insensitive intestines or infiltrated parietes, can be finished without pain. For instance, in an appendectomy in the "free interval" this course was pursued. My patient had chloroform for just one minute, a matter of some importance to her lungs and kidneys, and the avoidance of subsequent sickness, as she was a lady past sixty. She said the pain of tearing some adhesions round the appendix was slight and she could have borne it easily, but took the few drops of chloroform at my

request. Another patient had seven or eight minutes of chloroform while I was finding and separating the appendix. Here there was short after-sickness.

As for general anesthesia, so also for the local, the preparation of the patient beforehand is most important. But here a preliminary fast is not desirable. Those who have had a light meal previously are always, *ceteris paribus*, the better for it. The rule is to give them an egg beaten up with some milk and a little brandy, or a cup of tea or coffee not long before the operation. Again, some patients, if anxious, are soothed by a little morphine hypodermically. The feeling of *bien être* thereby induced enables them to bear the tedious lying on the back all the better. Of course some individuals are nauseated by morphine, and if this is known of any particular patient it will be avoided.

With a little experience, the surgeon, too, will have confidence in the method; and by manner and a word or two will communicate this feeling to the patients. It is a very bad policy to suggest to them that they have pain. At the very most, if they inquire, they can be told that, at their slightest wish, they shall have chloroform at any moment. A cup of tea or coffee given during the operation is a way of distracting the attention of the patient frequently employed with the best results.

As to the question of depressing effects following on the use of β eucaïne, I can only say that I have never seen any in a long series of operations, although in several up to 6 gr. of the drug have been injected exceptionally. To judge from the reports of those who employ cocaine for producing local analgesia, the contrary is the case, and they recommend the subcutaneous injection of strychnine and the use of camphor and other stimulants during operation (Lennander). They also insist that the patients should be kept quietly in the horizontal position for some hours after operation. With eucaïne, patients have taken no harm from walking away from my house, even when it had been used freely, and in hospital no after-treatment has been necessary. This appears to be a strong point in favor of eucaïne in contrast to cocaine, if the abolition of pain is in any degree equal in each. And from what I have seen and heard, the method here described appears to have given better results in this respect than those in which cocaine was employed; and the fact that all injections can be finished

before the operation has been begun, and need not be repeated, places it for long operations far above those in which (Schleich) injection has to be done over and over again in the course of an operation. With painstaking study and watchfulness in a large number of cases alone has it arrived at its present state of efficiency; and that, with longer observation and wider experience, it is capable of further development seems certain. But when, during twenty-four hours, I have been able by this method to perform the following operations with the most satisfactory results, it must be admitted that important progress has already been made: (1) Amputation through the knee-joint for gangrene of the foot, due to diseased arteries and diabetes; (2) abdominal section and opening of the stomach and jejunum in search of a source of severe bleeding (not found); (3) removal of a cyst of the thyroid; (4) Bassini's radical cure of inguinal hernia; (5) removal of a silver wire from round the patella.

There is one further point which contributes largely to success. It is that the surgeon should operate with delicacy, and without dragging more than is absolutely necessary on the structures in the field of operation. From this it follows that whoever injects shall be quite familiar with the details of the operation from beginning to end. It is undoubtedly better, therefore, for the operator himself to make the injection; but, if this is inconvenient, he must have an assistant who is quite familiar with all his methods and style of operation; in short, one who has frequently seen and assisted him, and is perhaps an operator himself. Such an assistant I can now rely upon for injecting my cases, and his results are all that can be desired.

With the following list of operations performed recently under eucaïne analgesia before me, I find it difficult to understand why anyone still employs cocaine, which is admittedly far more dangerous, and can hardly yield better results.

Numerous samples of the drugs above mentioned are sent to me from time to time, from both home and foreign sources. Some are in solid, some in liquid form, in sealed glass capsules. They are designed to save time in the preparation of the injection fluid. After much laborious testing of various methods, it appears to me that greater certainty and safety are secured by making the solution for one's self, as above de-

scribed, and that no time is lost thereby. The preparation of the fluid is simplicity itself, and it is all the safer from being made fresh for each case.

This paper is not intended to suggest doubts as to the benefits we all derive wholesale from general anesthetics. But we need no reminder that the latter have their drawbacks. And, from what I hear almost daily, this method appears likely to play a useful rôle, especially in the country and in the colonies, where the skilled anesthetist is not always at hand. But, even among ourselves in town, there are many cases in which the chief anxiety of the operator is how the patient will bear the general anesthetic, often necessarily prolonged. The diabetic—one of the amputation cases in my list of 91 operations performed under eucaine analgesia, was on the borderland of acetonemia—the aged people with strangulated hernia, the people with goiter, and even those simple cases where there is practically no danger from the operation itself, all undergo a certain risk from general anesthetics, which can be avoided by the above procedure. It requires some patience and experience to master the details of the latter, but it is certain that these are not thrown away.



UTERINE POLYPI.*

BY A. MIDGLEY CASH, M. D.

These growths are not perhaps met with so frequently as to be called common in the course of ordinary private practice; yet they do occur occasionally, and possibly, if one's mind were more on the alert to discover them, they would be found oftener than they are now. They do not as a rule cause symptoms which are not also common to many other forms of utero-vaginal disease—diseases, too, of much more frequent occurrence. Hence it is that the practitioner may not be sufficiently alive to their presence.

Whilst treating symptomatically a discharge of blood or of fluor albus, months may pass away, the woman losing health and strength meanwhile, when, on the other hand, an early ex-

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amination would have discovered a causal condition requiring surgical and not medical treatment.

And it is surprising how it should occur, and yet we have probably all met with such a case, where a woman comes to us for help so exsanguine as to be reduced almost to death's door, and yet the cause is one which should have been discovered and removed perhaps years ago. But whilst saying this I wish to take the warning to myself, for I confess to its coming on me almost as a surprise to find on P. V. examination that a uterine hemorrhage has been all along due to a neoplasm of this description. For one does well to suspect that there may be many women who go along for years bleeding from uterine polypi which are never discovered because they do not cause extreme symptoms. Copious hemorrhages, of course, attract attention, and active investigation follows, but milder hemorrhages, only perhaps coinciding with the monthly flow, may be overlooked, and yet will be surely, if slowly, undermining the unhappy patient.

This is most especially apt to happen at and about the time of the "change of life." The irregularity and redundancy of the uterine loss which occurs at this time needs to be viewed with suspicion, for it may easily happen that, while we are watching a case and waiting for the menopause to terminate the hemorrhage, a woman may be bleeding to death by instalments from the presence of an undiscovered polypus.

Admitting, then, the importance in such cases of an early P. V. examination, what of the DIAGNOSIS of uterine polypi?

To quote the late Sir James Simpson, "No practitioner can ever be perfectly certain that any large growth in the vagina is a uterine polypus until his finger touches and traces the pedicle itself of the tumor." And again: "In polypi arising from any part of the interior of the uterus and projecting into the vaginal cavity, the stalk of the tumor is always found more or less encircled by the lips of the dilated os and cervix of the organ. The tracing with the finger of this circle of the cervix round the pedicle of the polypus forms always an important diagnostic mark in such forms of the disease." Thus, mainly by digital examination, we arrive at the diagnosis, and, further, by the use of the uterine sound we shall be able to exclude what may of all conditions most closely simulate a polypus, viz., an *inverted uterus*. Also we may be able to obtain precise knowl-

edge as to the region of attachment of the growth, and the calibre and length of the stalk.

The process of formation of a stalk or pedicle in these tumors is interesting. Simpson treats of this in his lectures to his students, when he shows them a fibrous polypus of the uterus cut into to exhibit its identity in structure with that of fibroid tumors of the uterus. And he says, "You will see that the tumor has been caught in the neck of the cervix uteri, and you can almost see how, under the contraction of the uterus, the growth will be drawn from its seat and its stalk tend to become elongated.

"But the process takes place mainly when the tumors are still confined within the uterine cavity, and is seen to take place as distinctly on the peritoneal surface. We only know that the tumor, like every other living structure, grows most readily in the direction in which it meets with least resistance. And, as the fibroid of the uterus cannot easily increase by forcing its way among the dense tissues of the middle coat, it must grow towards the surface to which it lies the nearest, and it may be that a continued but imperceptible degree of muscular action goes on in the adjoining walls which hastens its protrusion on the surface and favors its pediculation."

These growths which Simpson has so clearly described are then *fibroid polypi*, identical in structure with embedded fibroid tumors of the uterus, but as a rule pedunculated—attached by a stalk or neck to the uterine wall. They are usually rounded or oval bodies, sometimes taking a pear-shaped form. They vary in size from a small marble to a growth several pounds in weight. They are not extremely vascular, and the hemorrhage they give rise to is probably not so severe as that we meet with in the mucous polypi.

This bleeding occurs less from the growth itself than from the mucous membrane of the body of the uterus, which especially at the menstrual period, is apt to become extremely hemorrhagic, from the presence and irritation of the growth. This then will account for the fact that these fibroid polypi may be freely removed without fear, as a rule, of hemorrhage.

No large vessels are found in the pedicle, so that it may usually be divided, even by sharp instruments, as scissors or, as Simpson advocates, by his Polyp tome, a sharp, sickle-shaped knife.

Mucous polypi, on the contrary, are often extremely vascular, and from them take place at times those sudden drenching hemorrhages, which cause intense alarm, and may seriously threaten life.

These are the two commonest forms of uterine polypi, "benignant growths," yet serious from the hemorrhage they cause, and they equally require radical treatment. Attempts have been made to effect a cure by homeopathic remedies.

In a *British Journal* Dr. Herzberger is reported to have cured a case, the remedies being calcarea and thuja, with thuja vaginal injections. The time required was from December to the middle of February before the polypus came away. But, as the patient had severe bleeding and collapse during this time, it is probable she might have been saved a good deal by prompt removal at the first. Again, Drs. Alvarez and Chavez report cures under conium, but with violent hemorrhages occurring during the process of treatment. The Editor in a note, speaking of these cures by foreign doctors, says: "We envy their success in these cases of polypi, which we have not found to be so amenable to homeopathic treatment on this side of the Atlantic."

On the whole we conclude that while we may be thankful for the possession of medicines which may wither these growths where they are inoperable, yet where the contrary is the case we shall best consult our patients' interests by removing them as soon as we become aware of their existence. Simpson is with us here; he says: "It is a generally acknowledged principle in obstetric surgery that a polypus of the uterus should be extirpated as early after its discovery as possible." And Blundell says in his *Observations on Diseases of Women*: "In the treatment of this disease (uterine polypus) the first principle, undisputed I suppose by those who are possessed of experience in the management of these morbid growths, is, that it ought by all means to be extirpated; for unless it be removed, it will continue to grow larger and larger till it utterly wears out life, and this especially if it be shooting from the upper part of the uterus or even from the neck. It is, moreover, of vast importance in polypus, not only that it should be extirpated, but that this extirpation should be accomplished as early as possible. Lay this down, then, as a most important part of your practise, that polypi are not only to be taken away, but that they are to be

extirpated early, as soon as they are discovered and as soon as it is practicable."

Now as to the *method of removal*. Various methods have been practised. The most usual are, excision—done by scissors—bistoury, or polypome. This may be suitable, as I have said, for a fibroid polypus, in many instances without fear of hemorrhage; probably for a muco-cellular polypus it would be risky; and as we cannot tell beforehand what vessels may be concealed in the stalk, we shall best consult our patient's interest, and our own reputation, by choosing some method which will remove the growth in a bloodless fashion. To effect this, we may have recourse to torsion: seizing the pedicle with a strong pair of forceps, and twisting it round till the polypus comes away; or we may cut safely and bloodlessly through the stalk by the cold wire snare, or by the incandescent loop of the galvano-cautery.

I have tried these several ways, and have found that when the growth is small and soft enough to be so dealt with, that by torsion is most quickly and easily practised. But I am inclined to think that the greatest security against after-hemorrhage is attained by slowly working off the growth with the wire snare, as by the use of the Hicks' ecraseur. And this is a matter we need to take some care to avoid, for when, after the section is made, the cut end of the pedicle retracts within the uterus, and the uterus itself—downward traction withdrawn—retires upwards into the abdominal cavity, it is not difficult to imagine what trouble may be caused if secondary hemorrhage should follow.

So much then for the methods, and given the complete removal of the uterine polypus, no operation in the realm of surgery is more satisfactory. The hemorrhages, large and small, obstinate and recurrent, at once cease, and the patient makes a rapid and uneventful recovery to health and strength. Her physique becomes more robust, her pallor disappears, the various neurasthenic and anemic conditions vanish, and in a few months one would hardly recognize the regenerated woman for the weak, washed-out invalid, with the pseudo-cancerous cachexia, who came but recently for diagnosis and treatment.

The first case I have to report occurred many years ago, when I had only just commenced practice.

CASE I.—Mrs. B., aged about forty-five. She had always

been a sensitive, delicate woman, and since her last confinement, fifteen or sixteen years previously, had suffered from partial prolapse of the womb. This had become more marked the last eighteen months. She had had much "bearing-down" pain, and became aware for the first time of the presence of polypi. They had bled occasionally, and she had been troubled by uterine catarrh. She consulted Mr. Gillow, who advised her to have them removed. *On examination* two fleshy growths were found protruding from the vagina, and by the probe it was evident they sprang from the internal os uteri, and were situated one on either side of it. The os was patent but too narrow to admit the finger. It showed evidence of cervical catarrh. The uterine prolapse caused the cervix to be very low in the vagina, and so made the necessary manipulations easier. Dr. Ayerst and Mr. Gillow fixed the uterus and drew gently with volsella on the cervix. I slipped a fine wire noose in a Wyld's snare over the smaller growth, but the wire snapped at the strain, so using a pair of polypus forceps the two growths were successfully removed by a few steady twists. A sponge tent soaked in perchloride of iron solution was inserted in the cervical canal, which effectually prevented any bleeding. The smaller polypus was about an inch long and shaped like a grape, with a short, narrow stalk. The larger one was about three inches long, its base of attachment only slightly contracted. It had a fibrillated surface with longitudinal septa. Microscopically these growths were found to be of the mucous variety, having a fibroid-cellular structure with a considerable vascular supply.

The patient made a good recovery and returned to her home in the country seven days afterwards. Two months later I had her report: "Doing very well, can take exercise and feels better than for a long time," having got rid of all her former symptoms.

This lady had always been a delicate, sensitive creature, and the presence of these growths had largely increased her troubles, having superadded uterine catarrh, and aggravated uterine prolapse, which incapacitated her from taking exercise and reduced her to a condition fit for little but constant confinement to a couch. Their removal quickly remedied the prolapse and catarrh, and enabled her to get about and take exercise of which she had long been deprived.

CASE II.—Mrs. M., age about forty-eight and recently married, came to me complaining that for the past nine months she had suffered from profuse flow which she supposed to be excessive on account of the "change of life." She had formerly consulted Dr. Neild, then of Plymouth, who had discovered she had a uterine polypus. I found the polypus to be attached by

its pedicle to the inner aspect of the anterior lip of the os uteri, which latter was concealed by its growth. It was about the size of a blackbird's egg, and very red and vascular.

A duck-bill speculum was introduced, and with a long pair of forceps I got hold of the pedicle of the tumor and twisted it off by several turns of the instrument. The hemorrhage was slight and was stopped by pledgets of lint soaked in hamamelis tincture. There was no further discharge of any kind, and on the eighth day the patient was up and going about as usual.

The polypus here was of the mucous variety, and attracted attention by causing the usual hemorrhage, and in addition some amount of pain was complained of. The result was a satisfactory recovery.

The fact of recent marriage in this case is a clinical point of interest in the life of a uterine polypus. Sexual intercourse being specially likely to provoke bleeding.

CASE III.—Mrs. B., a stout, rather ponderous woman, age forty-seven, who had had fifteen pregnancies, came under my care complaining of an increasingly profuse flow at the monthly periods, sometimes lasting as long as three weeks; the discharge was dark, clotted, and very copious, and had lasted off and on for eighteen months. She had had a good deal of intermenstrual leucorrhea, and was getting very low, exhausted, and depressed by this severe constitutional drain. She complained much of backache and a distressing sense of "sinking." The bleeding was markedly lessened when she stayed in bed, and was perhaps slightly reduced by the medicines she had taken, of which ipecacuanha, hamamelis, and sabina, seemed to have had the most effect.

On making a P. V. examination, I found a firm, fleshy polypus, the size of a bantam's egg, protruding through the os uteri. It was very vascular, and bled freely when touched. Its pedicle appeared—as well as could be made out—to take origin at the anterior part of the cervical canal; the sound passed easily two and a half inches into the uterus.

Within a few days I removed the growth. The bleeding was first stopped by applying Ruspini's styptic; then the wire loop of a Hicks' ecraseur was slipped over the polypus, and pressed home on to the pedicle. The wire being gradually tightened by a few turns of the screw, the stalk was slowly cut through, and the polypus fell into the vagina, where it was easily extracted. There was no bleeding. Chloroform was not given and the patient hardly felt any pain. There was no after discharge. Twelve days later the ordinary "period" occurred, but the discharge was pale and slight, very different to what it had been for many months past. The following menstrual interval was eleven weeks, and thereafter catamenia became pretty much a thing of the past.

This unfortunate patient had had a hard child-bearing life, fifteen pregnancies, living and dead, severe post-partem hemorrhage, and a septicemia of which she nearly died. She had never known what it was to enjoy a healthy, comfortable existence, and when her troubles seemed about leaving her, a stormy menopause was complicated and aggravated by the drain and distress of a uterine polypus. I am happy to be able to recollect that with its removal, her special troubles disappeared, and she was able to enjoy a more peaceable existence till the time of her final departure, sixteen years afterwards. The hemorrhage was coincident with the menopause, the natural loss of which it greatly increased; but as Mrs. B. had always tended to some considerable freedom in this way it did not at first seem to be anything unusual.

CASE IV.—An elderly single lady of sixty, generally enjoying good health, residing seven or eight miles in the country, sent hurriedly for me on account of an attack of hemorrhage. Dr. Cash Reed was staying with me at the time, and gave me his kind assistance. On our arrival the history given was that she had been bleeding from the womb for about four years; the first hemorrhage being one year after the menopause was apparently passed. For the last day or two the hemorrhage had been severe, and more than once in that period she had lost over a pint of bright blood at a time. Not being aware on leaving home of the nature of the case, I was not fully prepared to deal with what I found at once on examining, viz., a uterine polypus, about the size of a large grape, nodular, but soft, and which was hanging by a long firmish pedicle from the os uteri. I had only with me a short pair of Spencer Wells' catch forceps. With these I endeavored to seize the pedicle, but only succeeded at first in reaching and twisting off a part of it. Dr. Cash Reed managed to hook down the pedicle with his finger, till I was able at last to get firm hold of it, and twisted it through bringing away the polypus intact. On this all bleeding at once stopped. A tampon of carbolized wool was inserted. The polypus appeared to be of the muco-cellular variety. It was about an inch long, flattened and shaped somewhat like a broad bean.* An injection of liq. potas. permang. was used for a few days. She had no further trouble and remained soundly cured.

This case illustrates the somewhat insidious character of these growths. As far as I recollect, for it is some eight years since, the attacks of hemorrhage from which this lady suffered, had never been mentioned before, though I was frequently in

* Specimen shown.

the way of seeing her, as her sister was a constant invalid and under my care. Clearly they had never been severe enough to attract much attention. And yet, without any apparent reason, sudden profuse gushes came on, upwards of a pint being lost at a time, making the case one of first-rate severity requiring instant attention. The growth being soft, may have had some vessel possibly ulcerated by attrition—small mucous polypi having been frequently known to give rise to the most extensive bleedings.

CASE V.—This was a married lady of fifty-five, a patient of the late Dr. Woodgates, of Exeter, with whom I had previously seen her. She had never, apparently, got over the menopausal flow which had been going on for years in large amounts, and she was extremely blanched and anemic from loss of blood. Latterly she had become worse and began to pass clots. She had, I believe, always objected to having any internal examination made. Dr. Woodgates, however, now insisted it must be done, and sent for me. I found a large, firm, nodular growth, the size of a hen's egg, projecting into the vagina, and tightly grasped above by the cervix uteri. It was possible to pass the finger quite round this body and up to the fundus, where the point of attachment was found to be. There was bloody and mucous discharge, and she suffered much from bearing down. It was clear she was suffering from a pediculated fibroid polypus of the uterus.

The patient and her friends consenting to its removal, I went over to Exeter again. Dr. Vaudry anesthetized the patient with A. C. E. mixture. A vaginal douche of (1-3000) perchloride of mercury was given as a preliminary. The tumor was then pulled well down, by volsella, and the womb got low enough for the necessary manipulations. A strong platinum wire loop was put over the tumor and slipped up past the cervix to the fundus, where it was screwed home on the pedicle at its point of origin from the uterus. I used a powerful ecraseur, made by Meyer and Meltzer, in which the loop of wire worked, and this was now connected with an electro-cautery battery and the current turned on. The revolving wheel was slowly worked so as to give ample time for searing through any large vessels which might be cut, for as the neck of the polypus was large, it was possible that a too rapid section might entail hemorrhage. The neck being, however, slowly divided, very little blood was lost—not more than two drachms in all. The growth was thus gradually cut through at its neck and removed. It was a typical pear-shaped, dense, fibroid polypus, firm and compact in structure. It measured two and three quarter inches long by two inches across at its inferior and largest diameter.

An iodoform suppository was put in and secured with a tampon. Arnica was given her internally. In a few days I re-

ceived a favorable report from Dr. Woodgates. There had been no bleeding or trouble of any kind. She slept much better than she had been used to do—the temperature had been always below 100°, and was then normal. At first the use of a catheter had been necessary. Seven months later she was reported as quite healthy, and having “lost all her old anemia.” The result was here eminently satisfactory. The patient was quite unusually exsanguine, and at the time of the operation appeared to have hardly any more blood to lose.

She could not have continued much longer at the rate she was then going down hill—she was reduced to a pitiable degree of abject nerve and muscular debility.

The removal of the growth stopped all this, and promptly reversed the order of things. She at once responded to a tonic line of treatment, medicinal and dietetic, rapidly gaining color and strength.

I have a high opinion of the electro-cautery incandescent loop in a case such as this, where one cannot be sure that there may not be large vessels in the pedicle of the tumor. Its hemostatic action is just what would be desired, and is thoroughly attained when the loop of heated wire is very slowly drawn tighter, so that plenty of time is allowed for the sealing up of each vessel as it is divided. As one cannot see the process, the test is to have a gentle fizzling sound produced, such as the hot wire will cause when, at a dull red or black red heat, it presses on the constricted neck of moist tissue which it is incinerating. When it is certainly known that large vessels are in the pedicle, and very thorough searing is necessary, I have found a distinct advantage, whilst dividing the tissues, in occasionally cutting off the electric current, and then again turning it on *without at the same time tightening the loop*. This maneuver more completely hardens the soft parts, and coagulates the blood and moisture in the tissues. Moreover, in a septic cavity like the womb is when it contains a polypus, the action of the electric fire is advantageous over cutting instruments, in that it leaves no raw surface for absorption, and hence lessens any after-danger of infection and septic phlebitis.

CASE VI.—Miss L., a slight, rather delicate young lady of thirty-five, of a rheumatic tendency.

Under treatment, two years previously, for rheumatoid arthritis of hand which she appears to have quite got the better of. For the last eleven months has been troubled with menorrhagia.

The first thing she observed was that the menstrual period

was prolonged and lasted about three weeks as a discharge of light, thin blood. Under millefol. and sabina this passed off. She was only seen occasionally as she lived at some distance, and for a time their own local doctor had her in hand.

Then she turned up again complaining that the "period," after apparently stopping, had returned and was lasting off and on indefinitely. She got trillium ix, which helped matters, and seemed satisfactorily to check the flow. So she went on through the summer and by staying in bed for the first day of each monthly time, and continuing trillium, she got along without much loss and did not seem to be pulled down or unduly lowered. Her periodical condition, though free, was not more than what many normally go through and might, it seemed, be fairly accounted for by her arthritic temperament. At the same time, I did not feel satisfied, and told her mother that if this hemorrhage recurred I must have an examination to clear up the case.

Up to this time such loss as she had had always yielded to treatment, and the effects produced upon her constitution were not such as to make it evident that it was injuring her. These two circumstances justified me, I considered, in postponing an internal examination on an unmarried woman. However, shortly after this, the hemorrhage recurred, and I went over and examined the patient. I found the parts extremely dense and rigid, a very narrow vagina, and the cervix high and difficult to reach. Grasped firmly by the cervix was a firm round body, protruding through the os uteri into the vagina. I was just able, beyond it, to touch the pedicle, apparently springing from the uterine wall, near the internal os. I explained to the mother that her daughter had a fibroid polypus of the womb, which was causing the bleeding, and that it should be removed. After some consideration consent was obtained, and the patient transferred to a nursing home. In order to relax the rigid genital passages vaginal injections of warm oil were given the night before, and at the same time the bowels thoroughly cleared by enemata. For the sake of its relaxing effect it was deemed best to use a general anesthetic, and a mixture of chloroform and ether was given, under which the patient went very gradually. The patient was fixed in the lithotomy position, a duck-bill speculum was passed, and the growth thoroughly exposed. The parts were, however, extremely rigid, and still needed dilatation. A bi-valve speculum was therefore used, and by opening the blades with the screws, the necessary room was obtained.

With a strong pair of long double-jointed forceps I endeavored to get a hold of the pedicle, but after several trials failed to get a firm grip, the blades, perhaps, were too short to grasp the whole neck of the growth. Firm traction by means of a volsellum brought the polypus by degrees well down to

the vulva, and it was held there while the wire loop of a Hicks' snare was slipped over it and insinuated up to the pedicle, and by gradually tightening the screw this was divided and the growth removed. The cervix retracted, and passing my finger well up I was unable to feel anything against the wall. The point of attachment was from the uterus just above the internal os anteriorly and to the left. Very little bleeding occurred. The electric lamp was turned on the os for a few minutes, but nothing passed and firm pressure above failed to show any hemorrhage.

A Hemisine enule, 1-64 grain, was put into the cervical canal and tamponed in with sterilized gamgee tissue. Not a stain of hemorrhage was visible afterwards. The tampon was withdrawn the same evening. Arnica was given internally every hour.

In seventeen days the catamenia came on and lasted five days, quietly and naturally, a normally moderate flow such as was usual to her in former years, and entirely unlike any period she had had during the preceding eleven months.

The growth, on examination, proved to be a smooth fibroid polypus with the usual dense structure similar to a uterine fibroid tumor; the section, white with wavy, retractile tissue, felt grating on cutting almost like scirrhous, the cut sections showing strongly convex.

As to the nature of the polypi. In my six cases, two were fibroid, three were mucous or muco-cellular, and of one I do not find it clearly stated, but, probably, it was mucous in structure.

The pre-eminent symptom was bleeding. In five of them specially so. In one (the first), cervical catarrh and prolapsus were chiefly complained of, but this lady was an invalid who had led a very inactive life, which probably accounted to some extent for the fact.

In four of the cases menorrhagia or metrorrhagia (for strictly speaking both were present) co-existed with the menopause and complicated it. The average age of the women when they came under treatment was forty-nine, but this average is made higher than it would have been because of the greater age of Case V., where the hemorrhage had certainly prolonged, as well as increased, the ordinary menopausal flow considerably beyond the usual time. Of the others, one was aged sixty and had passed the menopause before the flooding began. The other was a comparatively young woman of thirty-five, the youngest of my cases. On the whole the worst hemorrhages were met with in those cases where the polypus was mucous rather than fibroid, which I am inclined to believe is the usual experience.

Where, however, these latter growths attain a large size, they may, doubtless from the turgescence of the uterine mucous

membrane which they cause, set up a quite extraordinary bleeding.

No great difficulty was met with in the removal of these growths.

The last case certainly appeared as likely to be so, on account of the extreme rigidity and length of the vagina, making access to the tumor difficult. Dilatation, however, was finally well brought about.

The result in all of the cases was entirely satisfactory, the hemorrhage in each disappearing completely and promptly on the removal of the polypus, and a marked change for the better being established in the health and strength of the women.

Current Comment.

L. S. Colter, M. D.:

An observation I desire to make in reference to *the use of the obstetrical forceps* is that from what I have seen, I am convinced that not one physician in ten knows how properly to make traction after the forceps have been applied.

I was always taught that unless great emergency demanded haste that plenty of time should be taken with this procedure; that if the woman is having periodical uterine contractions, to make traction with the pains and rest in the intervals; if she is not having contractions, to imitate nature in this respect and make traction for a short period and then rest, slightly relaxing the grip of the forceps on the child's head, and then to again make traction. The benefit of such a procedure is well known to all, and yet I find that this is just exactly what a great many physicians do not do. They seem to be possessed with the idea that the safety of both woman and child depends largely on the haste with which they can expedite the delivery, and they make continuous traction with all the force that they can command. I have frequently seen strong men, bathed in perspiration, tug and tug away at the forceps until they have actually become exhausted from their continued violent exertion, and when finally they have perchance succeeded in bringing the head down upon the pelvic floor and the perineum is stretched to the limit and its edges thinned out to the thickness

of a sheet of paper, they seem to think a supreme effort is necessary on their part, and with a final desperate pull they literally jerk the head, not over its margin, but through its substance. If I have read aright, if there is any one thing that the text-books plainly teach, it is in using traction to avoid haste and violent pulling (unless imperatively required) and to draw by the strength of the hands and arms and not by hanging the weight of the body on the instruments.

I have recently been present at a forcep delivery where the operator made traction by a pendulum-like motion of the body from side to side; both hands grasping firmly the handles of the instrument, he swayed them to and fro, laterally, for all the world like you would attempt with a pair of pliers to rock a refractory spike from a board. I have always been taught and believed that the forceps were always to be regarded as tractors pure and simple, and never as levers. Nothing can be gained by such rocking movements, while the danger of traumatism to the soft parts is certainly great.

A failure to bear in mind the direction of the axis of the pelvic canal in making traction I find to be another common error with many physicians. It is truly astonishing to see how many men in making a high forceps operation will begin their traction and continue with it, paying absolutely no attention to the position of the head or the "curve of Carus."

A short time ago I was called up by phone and asked to take my obstetrical forceps and repair to a certain part of the city and ascertain what was the matter with two physicians who had for about thirty-six hours been laboring industriously to deliver a young woman with forceps. They had finally given up and telephoned him to come and make a Cæsarean section, as the child could not otherwise be delivered. On reaching the patient's house I was informed by the physicians, two able-bodied men, that in the past twenty-four hours one of them had applied the forceps six times and the other one time, but that in spite of the fact that the last time they had kept up the traction for three hours and with all the strength they could command, they had not been able to budge it an inch. They had finally agreed that her pelvis must be contracted and that an abdominal section was indicated. I told them that I did not make abdominal sections, but that I would like to try my luck with the forceps. They consented, but added that they felt sure that I

would not succeed as they were both evidently stronger men than myself.

On examination I found the head at the brim and the woman's pelvis apparently of normal dimensions. The occiput of the child's head was to the left and anteriorly. With the woman in the lithotomy position and sitting before her on a chair, I applied my Elliott forceps, and with my right hand grasping the handles and the index finger of the left hand resting on child's head to see that the blades did not slip, I began to make traction, using the strength only of my right hand and arm and making the traction in the direction of the axis of the pelvis. The head began immediately to enter the pelvis, and in less than ten minutes from the time I began to pull was down on the perineum, and delivery was easily completed, completed as easily, I think, as any I had ever made, and without any great expenditure of muscular force. Evidently, in making traction they had disregarded the direction of the axis at the brim and were attempting to dislodge the head by pulling it against the anterior border of the brim, and, of course, they failed to move it.

Personally, I have never used the axis-traction forceps. I do not own a pair of them and doubt if I ever will. I have never encountered a case of a high forceps operation that I could not deliver with the ordinary long forceps. Possibly this has been but a matter of good fortune, but I have always believed that the chief excuse for the existence of the axis-traction forceps is the fact that too many physicians need some such instrument to suggest to them the direction to make traction and then to enable them to do it. I have always believed that I could do it without them.

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Chas. E. Ziegler, M. D. :

After five months of study and service as an assistant in Leopold's clinic, I am fully convinced that there is no reason for the prejudice against the use of Bossi's dilator, for *artificial dilatation of the pregnant uterus* which is exhibited by those who have had no experience with the instrument. Hirst has used the instrument twenty-five times, nineteen times for accouchement forcé, and states the only serious lacerations which he has had, have occurred in women delivered in less than twelve minutes and further expresses the belief that with slow dilatation,

there is not much more danger of a lacerated cervix than in the average labor. The opinion of this most eminent and successful practitioner and teacher certainly deserves the most careful consideration.

As to the dilator itself, it may be said that all instruments without a pelvic curve, as for example Fronmer's model, cannot be too severely condemned. Serious lacerations, accredited to the procedure itself, have unquestionably been caused by the use of such improper instruments. Krull's model, with the pelvic curve and eight branches, is in my opinion the ideal instrument.

With two or three fingers of the left hand in the vagina, the os is located and the vagina opened. The dilator, held in the right hand as the blade of a forceps and with closed branches, is inserted properly into the cervix and with a few turns of the screw is fixed in position. In the presence of pains, the insertion must take place between pains, as must also subsequent dilatation. With the beginning of dilatation, almost without exception, uterine contractions are produced. Depending upon the amount of tension, the screw is turned through a quarter or half circle, and if time permits, two or three pains are allowed to take place before further dilatation is attempted. With each turning of the screw the most careful examination must determine the position of the instrument, the progress of dilatation and detect the occurrence of lacerations. As the danger of laceration increases with advancing dilatation, the screw must be turned through shorter distances and with longer intermissions as dilatation progresses. And for the reason that the os, after the removal of the instrument, tends to recontract, it is advisable to dilate to a somewhat greater degree than is demanded, and when time permits to leave the instrument in position at the height of dilatation for ten or fifteen minutes; and for the same reason also to proceed to immediate delivery, best accomplished by means of the forceps. Version and extraction give less favorable prognosis for both mother and child, as the constriction of the os about the neck of the after-coming head has not infrequently been responsible for the death of the child and severe lacerations of the cervix.

According to Leopold the use of the instrument for rapid, complete dilatation is contraindicated in primiparæ with an intact cervix, in multiparæ with a scarred or indurated condi-

tion of the os, and in cases of placenta previa. The most suitable case is "the primipara with an obliterated cervix, a closed or but slightly opened external os and a moderately low position of the head—as for example, in eclampsia." Somewhat less favorable, but still indicated, is the multipara with an open, dilatable external os, and a patulous, somewhat shortened canal.



Ethan H. Smith, M. D.:

Before referring to the *repair of lacerations*, I wish to express the belief that the shoulders do more harm to the perineum than the head. The old notion seemed to be that the head was the all-important thing in any case of labor. The head was blamed for everything that went wrong in any case where accident occurred. This belief was tacitly accepted by the profession as a whole and settled into a sort of superstition from which it will take years to educate the rank and file, as well as many of the authorities, in the practice of obstetrics. I believe that very few practitioners have ever taken pains to observe just when the perineum gives way, or what causes it to rupture. I have made it a habit to examine the perineum, gently, but carefully, after the head has passed. There is seldom if ever a time when this cannot be done without any inconvenience or detriment to anybody. I have seldom found a perineum ruptured by the head, unless the head had been expelled by a sudden and excessively severe pain, or the dragging of the head through the external parts by the injudicious use of the forceps. Many practitioners wait until the child is delivered, and then hunt for a laceration. If they find one they assume that the head produced it, and will not be told otherwise. The permitting of the head to drop down over the perineum after it has passed and rotation is complete, thus favoring the passage of the upper shoulder, under the pubic arch, before the lower shoulder has passed the perineum, is responsible for the lower shoulder, or the elbow of the lower arm, plowing right through the perineum. The majority of ruptures, in my experience, have been produced by the shoulder.

I fail to see why the immediate repair of the perineum should be attended by many unsuccessful results, if it is done with any degree of care or skill. My own failures in this condition make less than 2 per cent. of all the cases repaired. I have

never but once allowed a perineum to go without immediate repair. In that case the condition of the patient would not warrant longer manipulation. Formerly I used silk, as I seldom had other material for sutures. I have had good results with silk. It is true I had some irritation about the stitch holes, and sometimes a small abscess, but on the whole I had very satisfactory results. I believe that much of my success was due to the fact that I attended to the douching and catheterizing, where the latter was necessary, myself. I had no graduate nurses for years in my early experience. I do not mean to argue in favor of silk at this time, for I believe that there are now better materials. I believe that the majority of failures are due to a lack of a deliberate and painstaking repair of the laceration. I believe that solutions of bichloride of mercury are the most pernicious of all solutions ever used. Sterile normal salt solution, if used freely and in a cleanly manner, is just as effectual and perfectly safe. A careful removal of all clots that might separate the raw surfaces and a trimming out of any hashed up tissue in which the circulation is undoubtedly destroyed, together with an accurate bringing together of the torn parts, so as to leave no pockets or "dead spaces," will be followed by successes in the vast majority of cases, provided the parts are not too much meddled with during the healing process.

I believe that the lack of accuracy in bringing anatomical structures into their normal relation, too much rough scrubbing of the parts with strong antiseptic solutions and too much pulling at the parts to look at them, with too much douching and meddling with them during the healing process, defeat more repairs than anything else.

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R. Jardine, M. D.:

During a period of eighteen months, I have treated *fifteen cases of eclampsia*. The mothers recovered in all cases. Six of the children lived, two were born alive but died in a few hours, one was born alive but died after a fortnight, and seven were born dead. My method of treatment is summed up as follows: Bleed the patient and transfuse a couple of pints of the solution, purge freely, and use hot packs. If labor has not come on, leave the uterus alone unless the fits continue to occur. If the os is nearly or fully dilated delivery may as well

be effected at once, while the patient is under chloroform. When the patient is very restless, a hot pack will often do the most good. The solution used differs from the ordinary saline solution, in that it contains a dram of acetate of soda to the pint of the ordinary solution, and I attach considerable importance to this modification.

In three of the earlier cases of the series the os was dilated by Frommer's dilator, and the child was extracted by version. This treatment was not adopted in the later cases, and after an extensive experience I have come to the conclusion that accouchement forcé is not necessary unless the fits continue to occur.

Of the fifteen mothers, eight were primiparæ, and in seven cases the pregnancy had gone on to full term. In one case only the urine was found not to contain albumen, but this case was probably not one of true eclampsia. Albumen was present in noticeably large quantities in each of two cases in which the fetus was macerated at birth.

One case was of interest because an application of ethyl chloride at the site of the insertion of the trochar for the infusion was followed by sloughing of the superficial tissues. In another case a succession of complications occurred and recovery was at one time despaired of. The patient in question was a primipara, aged twenty-one. When admitted she complained of swelling of the vulva, legs, hands, etc., and of specks dancing before her eyes. There was great edema of the vulva and of the abdomen. The urine was scanty, high-colored, of specific gravity 1024 and contained albumen 10 1-2 per 1,000 Esbach, and urea 7 gr. to the ounce. The patient was treated with hot packs, saline purges, diuretics, and a milk diet. The labia were punctured and 8 oz. of fluid withdrawn. The patient improved and the urine diminished in quantity. After three days labor set in and was terminated naturally, a living child being born. Six hours after delivery the patient had a typical eclamptic seizure; 12 oz. of blood were then withdrawn from the arm and two pints of the saline solution were transfused and a hot pack applied. She was kept under the influence of chloral for twenty-four hours and had no more fits, but had several marked shivering attacks. Eight days after delivery the temperature was 99.8° F. and the patient complained of headache. As the lochia were fetid the uterus was

douched out and a large septic clot was removed by the fingers and a curette. Two days later cellulitis of the left broad ligament set in and was followed after three or four days by phlegmasia alba dolens of the left leg. In the second week of the phlegmasia, which had appeared to be progressing favorably, the patient was seized with terrible dyspnea and with great pain in the chest. This attack was followed by several similar but less severe attacks. Two days after the first attack the temperature rose to 105° F. and tubular breathing and crepitations could be detected over a small area of the left lung. The right leg also swelled, but not to the same extent as the left one. The labia again became swollen and were again punctured. The patient's recovery was slow. The results in this series of cases have been so good that the author does not hesitate to strongly recommend the treatment adopted.

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J. T. Schell, M. D.:

It does not require much argument to convince men with surgical training and tendencies of the importance of *treating the umbilical stump* according to the accepted aseptic principles, but to the general practitioner (who, after all, does the bulk of the obstetric work in all communities) any new method which seems to be more time-consuming than the one to which he is accustomed does not seem to appeal.

A few moments of consideration, however, should convince the most skeptical that the method to be described is simply and easily applied and, in reality, is time-saving, for when the cord is once amputated aseptically, it retracts within the umbilical ring and requires very little, if any, attention thereafter.

As soon as the child is born the umbilical cord is clamped with a hemostat about three inches from its abdominal attachment; another hemostat is then placed a short distance from the first one toward the placental end of the cord, and the cord is then cut between. The child is now wrapped in its aseptic receiving blanket and placed to one side, and the whole attention is given to completing the delivery of the mother. After the third stage of labor is completed, which usually takes ten minutes or more, we give our attention to the umbilical cord. In the short time required to complete the delivery of the mother the vessels in the cord, as a rule, have ceased pulsating.

The cord and abdominal wall immediately surrounding it are

carefully washed in 1 to 4,000 mercuric chlorid solution. The hemostat is then grasped in the left hand, and a pair of scissors in the right hand follows the skin amniotic junction until this is severed completely in its entire circumference. Care must be taken not to cut too deeply, as the vessels of the cord are usually very close to the amniotic covering. If they should be cut, no serious hemorrhage will result, as the circulation has, as a rule, by this time practically ceased through these vessels.

So soon as the vessels have been exposed, the amniotic covering and the Wharton's jelly is stripped away in a direction from the abdominal wals and a ligature consisting of a piece of very fine (No. o) sterile catgut is then thrown around the vessels, and the cord is severed close to the ligature.

The stump is washed in mercuric chloride solution, dried with a piece of sterile gauze, and dusted with any good antiseptic dusting powder. The baby should not be put in the tub for about a week, but should be given a lap bath; the stump must be washed frequently in a boric acid solution, and a small amount of dusting powder used with the usual sterile pad and the abdominal bandage.

I have used this method for over three years and have never seen any complications arising therefrom. The old infected and rotting stump is done away with, and, aside from the question of its importance to the child, I believe that one source of possible infection to the lying-in mother can be thus eliminated.



A. G. Hart, M. D.:

It was in the early fifties that I began to use *chloroform*. I administered it freely, and always without any serious accident.

During three years of army life, in the *uncivil* war I gave chloroform, or was present when it was used, many hundreds of times. In a period of six months, we handled 15,000 wounded men, and performed 200 capital operations, and many hundreds of minor ones, all of any importance under chloroform. Here it was a frequent event to have patients brought in who were greatly exhausted by copious hemorrhages, and whose condition demanded amputation or other serious operations. Repeatedly when asked to advise in such cases, I said that the patient was not unlikely to die if chloroformed, but was sure to die from shock without it; and if he was to die let it be a painless death. It was a notable fact that under these unfavorable conditions we did not lose a case from chloroforming.

I have repeatedly seen patients, even in a feeble condition, kept an hour, or even more, completely under the effects of chloroform. Some years ago I gave it to a patient to whom I was called, with post partum hemorrhage and retained placenta. She was faint and almost exhausted from loss of blood, and yet resisted violently every effort to relieve her. It was the most appalling responsibility I ever faced. No advice could be had in time to be of any avail. It was chloroform or death. I chloroformed her with the imminent probability of her dying in my hands. I succeeded with the greatest difficulty in removing the placenta. Pulse and respiration had almost entirely ceased. Nitrate of amyl restored respiration, the flickering pulse rallied, the patient lived and fully recovered.

I think it is accepted that even ether anesthesia is sometimes attended with serious after results, and although I have never seen a fatal result from the administration of anesthetics, we all know that it is possible, even when every precaution is observed.

Is it surprising that one with the experiences I have related, should ask, why has chloroform been almost abandoned by the surgeon? It may be a question whether there are not compensations in its use, which call for a re-consideration of the relative value of the two anesthetics, and a larger use of chloroform in surgery.



B. C. Hirst, M. D.:

I would like to direct particular attention to the *after care of the obstetric patient* both in hospital and private practice. If the two commonest consequences of parturition, injuries of the birth canal and retrodisplacement of the uterus, were promptly recognized and properly treated, one third or more, numerically, of the diseases of women would disappear from practice. It is in this particular that there is the greatest room for improvement. In the first place a sufficient number of examinations of the puerpera are required. We find it necessary to make three routine examinations after childbirth to obtain the result we aim at: one, four or five days after delivery to investigate the condition of the genital canal from the cervix down. The patient must be put on a table, a speculum and retractors are required and careful digital palpation is necessary. There is not an injury to the cervix, the anterior vaginal

wall, the posterior vaginal wall, the pelvic floor and the perineum that cannot be accurately diagnosticated in this way, and without this kind of examination some injury will frequently be overlooked to annoy and incapacitate the patient until it is finally patched up, often after years of unnecessary suffering. All the injuries of the genital canal can be successfully repaired during the puerperium. The second examination is made after the patient leaves her bed to determine the position of the uterus, and the third examination is made just before she is discharged. At this last examination the following facts are determined: The condition of the pelvic floor and vulva; of the vagina and cervix; the position and involution of the uterus; the condition of the appendages and pelvic cavity; the amount of diastasis of the recti muscles; the position of the kidneys; and the condition of the coccyx. The best times for these last two examinations in private practice are between the third and fourth week and at the end of six weeks, but in hospital work we often have to make them earlier, though we endeavor to have the patients report at the end of six weeks for their final examination. Any abnormality discovered is appropriately treated without delay.

I have often heard it said that such treatment of obstetrical cases in private practice is impracticable for several reasons, chief among which is inadequate compensation and the refusal of the patient to submit to it. The first argument of course, cannot be entertained. If we refused to do our full duty to our patients, unless we are always amply compensated, our guild would not enjoy the honorable position it holds. As to the second argument, this system is carried out in my dispensary service in the poorest quarters of the town and also in my private practice. If it is practicable in the two extremes of social condition, it is certainly practicable in the intermediate classes. The difficulties are no doubt enhanced in country practice and in smaller communities where assistance is not easily procurable, but while I am not so competent to speak on this phase of the subject, the difficulties do not seem to be insuperable.

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S. S. Graber, M. D.:

It often seems to me that as gynecologists we do not pay sufficient attention to very early displacements, and that they

often cause a degree of annoyance and discomfort to patients much beyond what we are willing to attribute to a lesion that may seem so insignificant. Probably in no branch of surgery is attention to detail and small things more essential to success than in this.

If we are not in a position to-day to cure complete *prolapsus uteri* in such a way as to safeguard against possible recurrence, we can at least prevent the earlier stages from becoming more aggravated forms.

Let us now turn for a moment to the old threshing floor as to how the uterus is held in the pelvis. The subject has been gone over myriads of times; the chaff has been winnowed out and most minds are agreed that it is held by the ligaments, and I am probably committing worse than heresy by making even the semblance of an interrogation.

To be sure we all admit that the pelvic structures and tissues being in a normal condition, there is no question but that the uterus is held by suspension, and as long as the integrity of the ligaments is maintained it will remain in position; but we have proof enough that this happy condition does not always prevail, though nature has made elaborate provision to this end by her numerous peritoneal and muscular folds. However, by her wisdom she has provided a constant and essential accessory as an aid to the ligaments and that is a firm, solid perineal body, which acts as a stay or buttress every time forces are brought to bear on the uterus to force it downwards, from one cause or another, thus preventing the ligaments from becoming stretched and attenuated as occurs little by little with every exertion, until they are no longer a factor in maintaining the uterus in the pelvis when the perineum is faulty. It is as surely a factor here as a buttress on a railway to hold a car on the track, and there are times and times again when the perineum does support the uterus and directly saves the suspensory strings from losing their tonicity.

But you say fallacy, because of the well known fact that complete lacerations are very rarely associated with procidentia. To answer this let us examine the ligaments in a little more detail. The broad, when the abdomen is opened, reveal the upper portion rather loose and relaxed, only the lower portion taking any part in the function of suspension. The round are not so much for holding up as for holding forward in at least

partial anteversion. There remain then the utero-sacral ligaments and these with the attachments of the tissues to the symphysis pubes—be there vesico-uterine ligaments in fact or not—form a suspensory structure for the uterus, and are the real elements of maintenance, and as long as they are in a condition of integrity, with the round holding the fundus forward, prolapsus cannot occur.

Now in complete tears we find this: that they usually happen during the birth of the first child and before there has been much if any damage to the utero-sacral ligaments; that following this accident there is marked retraction of the posterior vaginal wall; that in most, if not in all, of these cases we find the uterus in at least a fair degree of anteversion; that the patient loses considerably her expulsive power, and that she is forever trying, consciously and unconsciously, to avoid the disagreeable occurrences consequent on her unwelcome condition by endeavoring to "hold herself up" and prevent any straining; and that the very fact of the readiness by which she is torn is an indication of the unyielding quality of her tissues, which are not of the elastic and attenuating kind necessary to produce prolapsus.

Treatment.—Each patient is a law unto herself, and each has some little peculiarity differing from that of any other and no two can be treated absolutely and entirely alike, for one thing may predominate in one and another in another. Some are relieved by the simplest treatment, some by the use of pessaries; a great many by some form of suitable operation from the most simple to that of complete ablation. Occasionally an easy pregnancy seems to help some, and others seem to keep returning.

The means to be employed are tampons, pessaries, massage, hydrotherapy, tonics, good food and good hygiene.

As to the tampon this is only to be used for a short period and as a preliminary to other things. For the slight forms, especially those associated with ante- or retro-flexion, the common forms of small pads dipped in borac acid may suffice, but in the more aggravated or complete type, with prolapse of vaginal walls, one single large tampon should be used, and we insist, should be introduced with the patient in the knee-chest position and with all bands and corsets removed. It may be covered with an astringent powder, as tannic or boric acid, and

allowed to remain for nearly a week, then almost immediately replaced.

In regard to the use of pessaries we have been hovering between hope and disappointment, expectation and failure with this, that or the other form enough to make one despair. However, with it all we feel we have gained some small measure of success; but let us condemn the use of soft rubber rings, balloons, air bags and external appliances as being bad things.

In the treatment of that number, with this trouble, that would naturally be present in a clinic of over 6000 gynecological cases, we have found this double ring the most satisfactory. It is of course necessary to have some form of perineum. Sometimes owing to the tolerance acquired of the unnatural position of the displaced bladder, a woman may complain of some urinary difficulty for the first few days. The rings should not make undue pressure anywhere, may remain from three to six months, and when removed the patient should be kept quiet for a week or ten days and then the rings reintroduced. We have many women wearing these for a long time and the comfort is very great.

Without doubt an operation is first, last, and always the means to be employed in any case of pronounced prolapse where anything like a radical cure is to be expected

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J. N. Lewis, M. D.:

I will cite two cases of *extra-uterine pregnancy* operated upon by me.

Mrs. Z., age thirty-three; occupation, farmer's wife. Had been married twice, eight years to first husband, and seven to the second. Had never before been pregnant; periods had been regular until August, 1903, from which date she missed three periods, during which three months she had constantly had shooting pains, more or less severe and colicky, in her left pelvic region. At the end of three months she noticed slight flow of menses, with severe pain in the abdomen, followed by more profuse flow and great suffering, when her attending physician, thinking that she had a miscarriage, with retained placenta, dilated and curetted the womb, removing what he thought the placenta of a three-months' fetus. Her condition, instead of improving, rapidly became worse. She

had severe pains in her left side, causing great depression and weakness, also swelling and exquisite tenderness in the left hypochondriac region. Her condition rapidly became worse, swelling increased, pulse weak and thready, and all the symptoms of internal hemorrhage were present. She lived eight miles from a railroad station, and, when I saw her, a diagnosis of internal hemorrhage was made and the patient advised to be sent to a hospital immediately. The next day we removed her to the City Hospital, and a few hours after her arrival she was operated upon, when her abdomen was found to be full of black, tarry blood. After this was all cleaned out, fresh blood was noticed oozing from a rupture of the tube, and a great amount of fetal fragments were found in the blood clots. The hemorrhage was immediately controlled by forceps, and the tube and ovary were removed in its entirety. The patient was in a very weak condition; she was washed out thoroughly with normal salt solution, stimulants were given and she was put to bed. A liter of normal salt solution was injected, subcutaneously; this was repeated every six hours for six days, during which time the patient hung between life and death, entirely insane or unconscious; excessively jaundiced, pulse weak and thready at all times; temperature at or below normal; patient extremely nervous. About the end of the sixth day she began to become rational, and eventually made a complete recovery.

Mrs. A., age twenty-five; multipara, having two living children, the youngest of which was twelve months old.

History, that of perfect health. Menstrual flow had never returned since birth of last child, which she was then nursing. The attending physician was called to her on account of colicky pains of which she complained in her left pelvis; upon examination he made a diagnosis of salpingitis, and wired me to come to operate. I arrived at twelve o'clock, when he informed me that that morning about two o'clock, he was called to attend this patient, who had a severe pain, followed by symptoms of perforation and internal hemorrhage. So severe was the syncope, that he had at times despaired of her coming around, but by use of morphia and hypodermics of strychnia he tided her over.

When I examined her, I found the abdomen distended, but the percussion note dull; abdomen was very tender to touch, and examination per vaginam showed a soft boggy fluctuating mass in Douglass' cul-de-sac. I suggested the probability of

extra-uterine pregnancy, but both husband and wife said that every possible precaution had been taken to prevent pregnancy. However, I diagnosed internal hemorrhage from some cause, and advised immediate operation.

Upon opening the abdomen I found exactly the same condition of affairs as reported in the first case. The same procedure was carried out, the patient returned to bed in a fairly good condition except with a very weak, thready pulse. Normal salt solution was given as before. The doctor's report the next day was, that he took the case in his own hands, and used what he thought best, thereby saving the life of the patient; he believed that had he not used morphia the patient would surely have died. Fortunately, however, the patient made a good recovery. This case illustrates that, with some trouble and care, we can often save the life of the patient by operating upon her in a private house, where time, as in this case, was an important item, and where we cannot remove her quickly to a hospital. She might bleed to death, and probably will do so in many cases, by delaying a few hours. Therefore, after our diagnosis, the internal hemorrhage continuing, the patient gradually growing weaker, we should use the best precautions at hand for aseptic surgery, and operate immediately.

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Hunter Robb, M. D.:

It may be of some profit to discuss the uses and limitations of (1) the *vaginal speculum*; (2) the *tampon*; and (3) *applications to the cavity of the uterus*:

(1) For a skilled examiner the vaginal speculum is not necessary, but it can be used to advantage during certain operations, and in taking stitches out of the cervix or vaginal walls. In the rare instances in which a speculum is used in examinations those of the ordinary type should not be used for unmarried women. A small cylindrical speculum is much preferable in these cases.

(2) If encouraged, women are apt to form the "tampon habit." Properly applied tampons often do good in cases of subinvolution of the uterus, and chronic salpingitis or ovaritis, and much more rarely in cases of retrodisplacement of the uterus. But they must not be applied too frequently or over too long a period, as the necessary manipulations often cause

irritation. In applying a tampon, the patient should be in the knee-breast posture, which causes the pelvic organs to gravitate towards the abdomen, so that as soon as the speculum is introduced the vaginal walls separate and the tampons can be placed behind the cervix, and to either side of the median line of the body. A number of small tampons is better than one or two large ones.

(3) Irritating drugs applied to the cavity of the uterus rarely do good. They sometimes cause poisoning. Intra-uterine douches of bichlorid of mercury have often caused severe cramps and shock, and many patients have died from the effects of the poison. Again the use of a counterirritant in the uterus may render the parts more susceptible to bacterial invasion and thus facilitate extension of the pathological process to the adnexa.

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F. S. Clark, M. D.:

A case of *congenital displacement of the urinary bladder* was seen in consultation. The patient was a primipara, 23 years of age, with a conjugata vera of 8 cm. She was first examined after labor had begun, and the cavity of the pelvis was found well filled with what appeared to be a cystic tumor attached to the left pelvic wall. On catheterizing the tumor disappeared, but over the left wall of the pelvis was seen to be a much thicker covering than over the right side. This position of the bladder with the flat pelvis naturally raised serious questions of the best method of delivery. As labor advanced the os dilated slowly. When I saw the case she had been in labor 36 hours. Vaginal examination showed the pelvic outlet normal. The cavity of the pelvis showed nothing unusual except the thickening of the left side above referred to. The os was 4-5 dilated and very dilatable. The head was at the brim, the sagittal suture being in the right oblique diameter and the posterior parietal bone being lower in the pelvis than the anterior.

General considerations of the case seemed to justify the use of forceps at least tentatively.

Examination made later, when about to put on forceps, showed that the bladder was fairly well filled with urine, so that it reached to the middle of the cavity of the pelvis and extended downward to about two inches from the vaginal outlet. The examining finger could not be passed along the left side or

above the tumor, but could pass to the right and below it. The catheter was introduced and had to be passed upward, inward, to the left and then downward before the urine could escape. When emptied there remained only the thickening above referred to.

To avoid the danger of pressure of the forceps on the bladder, and so perhaps injuring it, they were applied to the biparietal diameter of the child's head which in this case was not very difficult. This application should likewise lessen the danger to the child and make the delivery easier. With the patient in Walcher's position the head was drawn into the cavity quite readily and delivered, the most difficulty being in rotating the occiput anteriorly.

The child died in about 48 hours, apparently from cerebral hemorrhage caused by pressure of the forceps and the bones of the pelvis at the inlet. After having delivered successfully many cases much more difficult than this one, such a result was hardly expected. The biparietal diameter was 8.3-4 cm. Either a premature labor or Cæsarean section would be advisable in case of another pregnancy.

The mother made a good recovery. There was no injury to the bladder. It was necessary to catheterize for a number of days.

An examination was made 10 months later. There were some adhesions from a laceration drawing the cervix to the right. The thickening at the left side of the pelvis was about the same as at confinement. The catheter passed to the left, and when the bladder was filled with water it formed the same tumor in front and to the left of the uterus as noticed at confinement, there being no gravid uterus above to prevent expansion in that direction; the bladder would hold more and be less tense than at confinement.



George B. Somers, M. D.:

Injuries to the perineum are of interest to every physician. They are very common and occur in the hands of even the most skillful obstetricians. When we consider the enormous number of children that are born into the world and the disproportion between the size of the unborn and the size of the canal through which nature forces them to travel, one wonders that *tears of the perineum* are not more common and more severe.

Regarding prevention, my own experience in obstetrics leads to the following conclusions: (1) The lateral position in confinements gives the very best control over the advancing head and enables the accoucheur best to protect the perineum. (2) That the shoulders do more harm than the head in passing over the perineum. In many cases the arms may be delivered immediately after the head by rotating them on the chest. This device relieves the perineum very greatly. (3) When forceps are used, the delivery should be as slow and deliberate as circumstances will permit. The majority of instrumental deliveries are entirely too rapid. Ample time must be given in order that the tissues may stretch and adjust themselves while traction is being made.

In a fresh laceration the parts have a very characteristic appearance. The wound is rough and irregular, presenting numerous shreds along the torn edges. The raw surfaces are covered with clotted blood. The surrounding tissues are livid, swollen, edematous, showing little tendency to contract. Just here we have clearly indicated the most urgent reason for attempting an immediate repair. Owing to the overstretching and semi-paralyzed condition of the tissues, the parts that belong together remain in contact for some little time before contracting, and where they are united at once we stand a better chance of getting accurate union.

The outer portion of the wound, that is to say the portion extending through the skin from vagina to rectum, is usually single and in the median line. When the tear goes off to one side, it is more likely to miss the sphincter and make its way deep down beside the bowel. Within the vagina, the wound is often complicated by branching off in two directions, following along each lateral sulcus.

An operation determined upon, the favorite solution for irrigation with most physicians is bichloride, largely, I suppose, on account of its convenience. But I consider that it is a very bad solution to play over a raw wound. Where it comes in contact with a fresh wound it forms a coagulum on the surface which does not leave it in good condition for immediate union. It is much better to use the principle of asepsis rather than antiseptics and use boiled water or normal salt solution.

Another detail is the free exposure of the wound. This is best done by drawing the edges widely apart by means of vul-

sella. These instruments should be held by the assistant. The wound cannot be properly united unless its full extent and nature are plainly seen.

When the wound has been properly prepared by trimming and washing, the suture material must be selected. Silk, I believe to be most unsuitable. It is true that it is easy to procure, easy to handle and easy to sterilize. But in my experience it has proved a failure, and I am sure that anyone who uses silk habitually will confess to having many stitch-hole abscesses.

Silkworm gut is stiff and unyielding and on this account is unsuitable for a tissue that is destined to shrink

Silver wire is a most excellent material and its virtues are too often overlooked. I am sure that much better results could be recorded in work about the perineal region, if it were used more frequently. It has the invaluable quality of being in itself an antiseptic material. As regards stiffness it has the same objections as silkworm gut, but is superior in that, if found loose, it may be easily tightened by twisting the ends. As a retention suture it has no equal.

The chief virtue of catgut lies in the fact that it may be buried in the tissues and therefore used as a running or continuous suture by which a wound may be effectually sealed; and I believe that for a fresh tear, catgut and silver wire form the best combination.

The wound properly prepared for coaptation, how shall the edges be brought together? We may choose either interrupted or continuous sutures. The majority of operators use the interrupted because it is the simplest and easiest to insert, but I believe that it is responsible for many failures. Interrupted sutures interrupt circulation. If the tissues are filled with a mass of tied sutures, the blood supply will be seriously interfered with at each point where a suture is tied. The ideal suture should bring the surfaces together without force and without interference with the circulation, for the vitality of the tissues and their power of uniting quickly, depends upon an unrestricted blood supply. The continuous sutures answer these requirements better than any other.

To go on then with the operation, the bowel tear must first be repaired. It is necessary to seal the edges effectually against the invasion of bowel contents. This cannot be done with an interrupted suture. The latter not only leaves avenues of

infection between each stitch, but the projection of the stitches into the bowel invites infection by capillary attraction.

In order to seal this part of the wound it should be brought together by a continuous, fine chromicized catgut suture, starting at the upper angle and passing firmly through the tissues so as to bring the edges of the mucosa together without penetrating into the bowel.

As soon as the bowel rent is closed, attention must be directed to the sphincter. The essential point of the whole operation is of course to unite the divided ends of this muscle. In the usual operation the raw surfaces in the vicinity of the divided ends are simply pressed together without making any attempt to ensure muscle coming in contact with muscle.

I wish to call attention to the necessity of bringing the ends directly together, without the possible intervention of any other tissue, not trusting to a chance union but actually isolating the muscle and uniting it under the guidance of the eye.

This may readily be done by fishing for the retracted ends with forceps. The muscle is inclosed within a sheath and each end may be caught and drawn out. When exposed it is easy enough to unite the ends with a couple of interrupted chromicized catgut sutures.

To re-enforce these sutures, silver wire should be inserted through skin and muscle, entering and emerging a little over a quarter of an inch from the median line.

The rest of the wound may be closed in any way that best suits the operator, but I believe better results will be obtained if continuous catgut is used. The precaution should be taken of inserting the sutures rather deeply, so that a firm hold on the tissues may be obtained. In the after treatment it is not necessary to catheterize. Each time after urinating the parts should be douched off with liquor cresolis compositus solution. Within 24 hours the bowels should move. Saline cathartics are best in order to procure watery movements. One or two movements must be procured daily for the first two weeks, and it may be necessary to give Rochelle salts twice a day in order to be effective. The diet should be very light. The silver wire suture may be left in three weeks.

As for douches, none should be given unless there is some odor to the vaginal discharge.

A. C. Stokes, M. D.:

The rapid advance which has been made in surgery of prostate has placed us in a position where we can now discuss questions in quite a different light from that in which they were discussed five years ago.

In handling all cases of *hypertrophy of the prostate* we have to deal with the following symptoms in their order, namely, residual urine; overflow of the residual urine; infection and retention. The residual urine when in small quantities gives oftentimes no symptoms at all, but usually when it becomes more than two ounces symptoms of overflow are manifest, in that the patient will not micturate freely, evacuating only small quantities of urine at a time and frequently. As the residual urine continues, this evacuation process becomes very urgent, until patients at times micturate as often as every half hour and during the night perhaps half a dozen times. This urine may still remain uninfected and clear. In a case I saw not long ago I drew from the bladder eight ounces of clear, uninfected urine; in another case only four ounces was drawn and still the patient was compelled to evacuate his bladder as often as five or six times at night.

When infection supervenes upon these conditions, more difficult problems have to be handled than when the urine still remains clear, and I am of the opinion that it is rarely advisable to do prostatectomy upon an infected bladder before that bladder has been treated for some time for its infection and the infection reduced to as low a virulence as possible.

Regarding catheter life: It does not seem to me that it can be spoken of in any terms of commendation, except, possibly, in cases which are complicated by other diseases, such as diabetes, Bright's disease, or some complication similar to these. In the last year I have made it my invariable rule to advise prostatectomy in all cases in which I found residual urine of more than two ounces, or for less than this when symptoms of frequent micturation were present. I have not seen a case in my experience which required the constant use of a catheter where there was less than about two ounces of residual urine, and I cannot but believe that the ground at present to be taken is that we should be guided by the amount of residual urine and the symptoms consequent upon it. We have some cases in which the residual urine will reach a much larger quantity than two

ounces and still no symptoms present themselves. However, carrying the residual urine in the bladder is always a dangerous thing and it must be guarded carefully, for at any moment it may become infected by germs passing into the bladder and we have a virulent cystitis supervening without any previous warning. I would say, therefore, never advise the use of the catheter, nor give one into the hands of the patient, but always first advise that the prostate be removed whenever the symptoms of prostatitis are sufficiently aggravated that the patient finds it necessary to seek the advice of a physician. The use of a catheter can never do any permanent good except in such cases as above mentioned. I think it should never be talked of; and we cannot hope to cure our patient by any means other than the removal of the prostate.

I would say, therefore, advise patients to be operated for prostatic hypertrophy, first, whenever the residual urine is greater than two ounces; second, whenever the frequency of micturition at night becomes a burden to the patient; that is, more than two or three times.

How to operate for prostatitis, is a still more difficult question. There are three recognized procedures at the present time for operations, namely: First, galvano-cautery of Bottini; second, suprapubic removal of the prostate; third, perineal removal of the same. Each one of these different procedures, even at the present day, has its advocates, and I have no doubt each one of these procedures is justifiable in certain cases.

The study of the position of the prostate by means of palpation by the rectum and cystoscopy by the bladder give us fairly accurate ideas as to the position of the prostate gland. In general it shows us that about 88 per cent. of the hypertrophied prostates are developed downward into the perineal space, the remaining 12 per cent. being developed as median lobe enlargement into the bladder or urethra. This would indicate that in most cases the prostate is best reached through the perineum (Murphy). In certain cases, however, the prostate can be reached through suprapubic incision. The results of Freyer's work are remarkable and all the English surgeons have followed Freyer's lead and are, irrespective of condition, shelling out the prostate through the suprapubic route. Freyer has shown that large portions of the base of the bladder and that three-fourths of the posterior urethra can be shelled out and the

patients make uneventful recoveries. We have seen Fryer shell out a prostate through the suprapubic route in from ten to fifteen minutes and in three weeks the patient be able to micturate with as much force and to retain the urine as well, nearly, as ever. John B. Murphy's conclusions are worthy of note. Regarding perineal prostatectomy they are as follows:

The perineal route gives the best ultimate results and it is accompanied by less danger than the suprapubic or Bottini operation as regards (a) hemorrhage; (b) sepsis; (c) injury to the neighboring structures; (d) life. The drainage is excellent and favors rapid restoration of the bladder to its normal condition, and the period of wound repair is much shorter than by the suprapubic route. Vesical control is almost uniformly good, but the sexual power is nearly always destroyed. The relief of vesical irritation is great and the frequency of urination is reduced to about normal.

Freyer claims that by suprapubic prostatectomy he gains a more thorough drainage of the bladder: that the enucleation of the prostate can be done much more rapidly and thoroughly than by the perineal route. The sexual function is retained more frequently. Fistula does not occur so frequently as by the perineal route. The continence of the bladder is more nearly perfectly regained, and the frequency of urination is reduced to a minimum.

In these conclusions neither Murphy nor Freyer discriminate between the different kinds of growths. Personally I am convinced that both suprapubic and perineal operations have their place in surgery. My study of the condition has led me to the following conclusions: namely, that the developments of the prostate in different directions require different operations and I have classified them as follows:

First—All developments of the so-called median lobe, which develop up into the bladder, can be more easily reached by the suprapubic route than by the perineal.

Second—Nodular developments of either lobe, which generally extend into the bladder, are also better done by the suprapubic route.

Third—Posterior developments of the whole prostate gland are better handled through the suprapubic route than the perineal.

Fourth—Posterior annular rings are also better handled through the bladder than in any other way.

All other developments of the prostate, which by the way is a larger proportion, are better handled through the perineum. When the enlargement of the prostate gland is due to adenoma alone it shells out usually by the perineal route rapidly and easily. When, however, the hypertrophy is of a fibrous nature it is difficult to dissect it out by the perineum without causing serious damage to the posterior urethra.

I wish to impress most thoroughly this idea—that we do not study our cases carefully enough in the determination of the character of the hypertrophy before we proceed to operate. I am sure that a more careful study cannot help but make us certain, that both suprapubic and perineal operations have their place in different kinds of cases.

♦ ♦

R. L. Payne, M. D.:

Let us never *curette* the uterus in a case of puerperal infection. It is almost impossible to curette clearly a uterus of normal size with firm contraction, but when we attempt to curette a uterus with a cavity five or six inches deep, more or less poorly contracted, and turgid with blood, it is entirely a physical impossibility to do it thoroughly. All that one can accomplish is by hit or miss method to scrape over more or less of the endometrium, leaving the rest covered with infected tissue the discharges from which will be eagerly sucked up by the myriads of lymphatics exposed by the curette. I have seen in consultation a number of cases of puerperal sepsis in which the curette had been used, and I have never seen one in which all the conditions were not aggravated after the curettage, in fact, I cannot recall a single case so treated that has recovered.

Again, let us never curette simply because there is uterine hemorrhage. I have seen some doctors who always advise the curette for uterine hemorrhage which is a symptom and yet in the majority of cases of uterine bleeding the cause is constitutional and no amount of local treatment can relieve it. Let us rather seek to determine if there be not some disturbance of vascular tension due to disease of the heart, liver or kidney, and seeking to relieve this, cure the woman without resort to an operation which cannot possibly do good. Again, let us never curette the uterus without having made a definite

diagnosis and with definite purpose to be accomplished, but let us rather remember it is an operation which may result in disaster and which has only a limited field of usefulness. And finally, when we determine the curette must be used, let us approach the operation with due sense of responsibility. Under the lining membrane of the uterus lies a network of thousands of blood and lymph vessels ready to suck up everything septic left in the womb, and no one should attempt a curettage unless he is as certain of the asepsis of his technique as he would be did he intend doing a celiotomy. I once had a doctor tell me he had curetted a woman and she was doing very well except that she had a temperature of 103, "but," he added, "you know all those cases have fever after curettage." Who shall measure the evil such a man has done? Let me insist then that the curettage be done only under the most careful antiseptic and aseptic precautions. Let a woman be properly prepared, see to it that everything to be used in the operation is sterilized by heat; know that the operator and his assistants have hands and arms scrupulously scrubbed and disinfected, and let everyone who takes part in the operation be covered by sterile sheets, remembering always that curettage is an operation which may result in lifelong woe to the woman.

Book Reviews.

A TREATISE ON SURGERY. In two volumes. By GEORGE R. FOWLER, M. D., Emeritus Professor of Surgery in the New York Polyclinic, etc. Two imperial octavos of 725 pages each, with 888 text illustrations and four colored plates; all original. W. B. Saunders & Co, London and Philadelphia, 1906.

The appearance of Dr. Fowler's work has been anticipated with considerable interest, for we naturally felt that a surgeon of his experience, who had added much to the present day methods, would surely enrich the literature of the subject by some definite and practical deductions.

The first volume is before us and the opening chapters on Inflammation, Surgical Bacteriology and those subjects which are usually considered under the head of Principles of Surgery are particularly interesting and concise in their representation which bespeaks the practical surgeon rather than the laboratory investigator. Then follow diseases and injuries of separate

tissues, gunshot wounds, chronic surgical infections, tumors, surgical operations in general and bandaging. The second part is devoted to clinical or regional surgery of head, neck and thorax, and it is in these sections particularly that the operator will find carefully detailed methods of diagnosis and operative technique that are of inestimable value, for they are based largely on the author's own experience drawn from a very active surgical practice. The text is elaborately illustrated with new and original illustrations which indicates that neither skill nor expense have been spared to present a volume worthy of its contents.

GALL-STONES AND THEIR SURGICAL TREATMENT. By B. G. A. MOYNIHAN, M. S. (London), F. R. C. S., Senior Assistant Surgeon to Leeds General Infirmary, Leeds, England. Second edition, revised and enlarged. Octavo of 458 pages, beautifully illustrated. Philadelphia and London: W. B. Saunders & Co., 1905.

This masterly presentation of the subject of Gall-Stones has placed Moynihan high in the scale of works on abdominal surgery. The operative technique, indications and contra-indications for interference and general logical discussion of the subject make this book invaluable to the surgeon who wishes to keep in touch with the latest thought and work on the subject of Gall-Stone disease.

This new edition following closely upon a rapidly exhausted earlier one has much new material, is carefully revised and beautifully illustrated.

THE OPERATING ROOM AND THE PATIENT. By RUSSELL S. FOWLER, M. D., Surgeon to the German Hospital, Brooklyn, N. Y. Octavo of 172 pages, fully illustrated. Philadelphia and London: W. B. Saunders & Co., 1906.

This unique and useful work will be of great use to the surgeon, who can formulate his directions to nurses and assistant very easily with it as his guide. It is devoted entirely to those subjects which have to do with an operation, preoperative procedures of sterilization and preparation, preparation of material of all kinds, sutures, solutions, dressings; arrangement of operating room, whether the patient is to be operated at home or in a hospital. One profusely illustrated chapter is devoted to the position and arrangement of the patient for any kind of operative treatment. The parts on post-operative treatment are very complete, and useful too are the tables which indicate at a glance the instruments to be used in any operation. Naturally such a work, however broad its scope, will give evidence of the author's own practice, but Dr. Fowler has been fortunate in assembling in a practical volume the technique and variations of the best methods of the day, so that the surgeon need only to add to his directions any pet procedure of his own to make the work absolutely indispensable.

Translations.

Physiological Hysteropexy.—Gabriel Gouin (*Le Gynecologie*) considers the merits of the operation of hysteropexy, from the obstetrical point of view. There are two main operative methods of dealing with retroversion of the uterus. The first that of fixing the uterus by its base or anterior surface directly either to the anterior wall of the uterus or of the vagina; the second that of raising the uterus indirectly by shortening the round ligaments—the so-called “physiological hysteropexy.” The disadvantages of the direct method are that by it the mobility of the uterus is destroyed and the plexus of nerves on the anterior surface of the uterus are exposed to pressure. The statistics of obstetrical results after direct hysteropexy are not encouraging. Thus, in 54 labors which went on to term, Mitlander reports 4 forceps cases, 2 Cæsarean sections, 4 versions, and 1 transverse presentation; and again in 74 pregnancies, 6 abortions, 3 premature connements, 1 death, 3 trunk presentations, 1 ear and 1 breach presentation. According to Lucien there are three ways in which pregnancy can proceed to term after abnormal hysteropexy: (1) by giving way to the adhesions; (2) by stretching of the adhesions; (3) by abnormal development of the parts of the uterus which have not become fixed as a result of the operation.

A good example of the occurrence of normal labor after the giving away of adhesions is that of a case of Gottschalk's, in which hysteropexy had been performed on a multiparous woman on account of retroversion. After the operation the woman had two abortions, one at two months and the second at three months. The adhesions were then broken down under chloroform, the woman again became pregnant, and this time went to term.

There is obviously great danger of return of retroversion if the adhesions give way. During the course of pregnancy after hysteropexy the patient often suffers from considerable pain, and is liable to ante-partum hemorrhage. Should the pregnancy go on to term the special dangers are of uterine inertia, premature rupture of the membranes, abnormal presentations, deviation of the neck of the uterus, obstruction of the passage by the hypertrophied anterior wall of the uterus, rupture of the uterus, and finally post-partum hemorrhage. Better results are obtained by the fixation of the isthmus of the uterus to the abdominal wall, partly because the isthmus is that part of the uterus which takes least share in the changes due to pregnancy, and partly because the base and borders of the uterus are left free. Even after this form of hysteropexy, however, the presenting part is high

up at the beginning of labor, engagement is tardy, and abnormal presentations are very frequent. Fixation of the uterus to the vaginal mucous membrane gives even worse obstetrical results than the operation already considered, while if the fixation be very low—although the obstetrical results are not so disastrous—the patient is very liable to a return of the retroversion. Altogether it may be said that vaginal hysteropexy should not be performed on any woman who may become a mother.

Indirect or "physiological hysteropexy" stands on a very different footing. The round ligaments are shortened by drawing them up through the inguinal canal, fixing them there, and cutting off the superfluous parts, and in this way the uterus is brought back to its original position of anteversion, and the factors which tend to keep it in position again come into play. The obstetrical results of the operation are excellent. The uterus retains its normal mobility and rises during pregnancy to almost the normal height in the abdomen. Lucien records 18 pregnancies after this operation, of which 17 went on to normal delivery at term, and 1 aborted from some special cause. Doléris's statistics, after 104 operations, are that 14 women became pregnant, 13 had normal labors, while the 14th was delivered at seven months of a dead macerated syphilitic fetus. The involution of the uterus after labor is in some cases slower than normal, but is complete. Return of retroversion is rare, and can only take place (1) when the round ligaments have not been resected to sufficient length and the pathological processes which led to their lengthening and atrophy have persisted, or (2) when the fixation of the ligaments to the inguinal columns has been incomplete. The ligaments cannot, however, be looked upon as cords of indefinite strength, and the treatment of coexisting pathological conditions cannot be neglected. The great drawback of the operation is that it is not applicable to cases in which the uterus is fixed by adhesions, or in which there is disease of the adnexa.

Various abdominal operations have been devised for shortening the round ligaments, but in most of them the method is to shorten the parietal part of the ligament, and leave its weak insertion untouched. Doléris's operation by transfixion gives to the shortened ligaments a firm insertion, and the obstetrical results from it have been excellent. Ten cases of pregnancy after Doléris's operation have been reported; in each case the patient was normally delivered at term, and after delivery involution of the uterus was regular and rapid, but the organ remained a little high.

Prostatectomy.—A. Schlesinger reports from Israel's clinic on the experience made with the operation of prostatectomy (*Deut. med. Woch.*). First, he deals with the selection of

cases. At present it seems as if one was in a period when the indications for the operation are becoming more and more extended, and it will not be long before one can advise operation for all cases of severe symptoms due to hypertrophy, provided that no definite contra-indications exist. The technique has improved greatly lately, and no one nowadays will advise the Bottini operation, which is uncertain and not free from danger. In all, the newer operation was carried out thirteen times, and in dealing with these cases he wishes to exclude one in which a previous attempt to remove the prostate by another surgeon having failed, the conditions for operation were considerably altered and the technique rendered much more difficult. Age does not form a contra-indication, and one of the patients was eighty years of age. Neither does infection of the bladder; nearly all the patients had severe cystitis. Pyelitis should not be regarded as an absolute contra-indication against the operation, but the experience which they made in one case was not very promising. Nevertheless, the condition of the patient was considerably improved by the operation, the incontinence of urine disappeared, and the urine was only slightly turbid when he was discharged from hospital. Neglecting to wash his bladder out regularly was followed by an increase of the signs of cystitis and pyelitis, and the patient died three months after the operation of his renal trouble.

With regard to other complications—such as arterio-sclerosis, granular kidney, and emphysema with bronchitis—one need not regard them as definite reasons against operating, but one will always avoid it unless the condition of the patient renders a desperate attempt to improve matters imperative.

Next he deals with the operation itself. Partial removal of the organ should be avoided. In three of the cases partial removal was carried out; in one case the whole could not be removed because of the results of a previous attempt to remove the prostate by means of Bottini's operation, as mentioned above. The result was that the patient felt well, and the cystitis nearly disappeared, but he had to pass a catheter three times a day. In the second case a piece of the right lobe of the size of a cherry was left, and the result was quite satisfactory. The third case was an exceptional one. The prostate gland was removed according to Rydigier, piecemeal through the perineum, but the portion attached to the urethra was left; no drainage was carried out. The result was perfect functional recovery. In spite of an occasional favorable result of the partial operation, the complete removal is certainly to be preferred.

In choosing whether to operate through the perineum or suprapubically, he decides in favor of the latter because it is technically easier, and because one cannot always reach enlarged middle lobes from the perineum, while they can be dealt with readily from the suprapubic incision. The urethra, as far

as the pars prostatica is concerned, is generally removed, but it can be conserved in some cases. He states that the removal of large prostates is easier than of small ones, and goes as far as to believe that the difficulties of the operation diminish in proportion to the increase of size of the gland. If the condition of the bladder is satisfactory, the suprapubic wound should be closed and a permanent catheter is applied to drain the bladder per urethram. The after-treatment is also important. Rest in bed is especially necessary, and in old patients must be continued as long as the permanent catheter is *in situ*.

His results are as follows: one patient was suffering from diabetes, and although the sugar had disappeared from the urine at the time of the operation, it reappeared a week later, and gangrene and finally coma ended the scene. Another patient died after three months, as stated already. A third patient was lost sight of, but one and a half years ago he heard that he still suffered from incontinence. Two other cases were complicated with calculus in the bladder. Two are still under treatment, but are doing well. Of the three partially removed, two did exceedingly well, and of the rest four were freed from all symptoms. The urine has cleared up completely and is passed normally at regular intervals, catheterization is not necessary, and there is no retention.

Puerperal Eclampsia.—Demelin (Journ. des Praticiens) gives his views on the proper treatment of puerperal eclampsia. If ever the teaching *primum non nocere* deserved to be obeyed, it is surely in connection with puerperal eclampsia. All therapeutic treatment ought to be founded, of course, on definite pathological knowledge; in this case we have no such knowledge; we can only call eclampsia one of the toxemias of pregnancy, and act accordingly. The method of active purgation has found to be unsatisfactory. When albuminuria is present in a pregnant woman, the ordinary prophylactic treatment by milk diet and frequent purgation should be undertaken. This lowers arterial tension and perhaps carries off some of the toxins by the bowel or removes one of the sources of reflex irritation in the shape of hard feces. The treatment of the actual convulsions ought to be the same as that of epileptic fits—that is to say, one should take care lest the patient damage herself by the violence of the convulsions, and should loosen all her clothing, and make her lie down. A rapid succession of convulsions is very apt to lead to a fatal result, so that it is necessary to check or limit the number as far as possible. From the moment of the appearance of convulsions, he recommends a diet of Evian water only, a liter in the twenty-four hours, to which milk may be added only as soon as all tremor has ceased; a daily clyster, in addition to a small drop of croton oil in 15 grams of castor oil by the mouth; venesection, and withdrawal of from 400 to 500 grams

of blood; and two baths in the twenty-four hours. Between the baths the patient is to be warmly wrapped in flannel and surrounded by hot water-bottles, while a near window is to be opened. Demelin employs neither chloroform, nor chloral, nor morphine, nor veratrum, because all these drugs have a special action on the liver and kidneys, which are in eclampsia already overtaxed; and, in his opinion, these drugs have been responsible for the production of jaundice in some of these cases.

The obstetrical treatment of eclampsia is important. One must remember not only that a toxemic patient is always very susceptible to septic poisoning, but also that she is unusually susceptible to the effects of slight absorption of poisonous antiseptics, such as carbolic acid and corrosive sublimate. Potassium permanganate, hot water, and boric acid should be used. The patient being already in labor, the general principle is to accelerate it; but this is often quite unnecessary, as the second stage proceeds in an almost tumultuous manner, with great risk to the perineum. Occasionally the question arises as to whether it would not be desirable to induce premature labor as a curative measure. If the eclampsia is really severe, it is perhaps generally desirable to empty the uterus; recovery sometimes takes place, and the kidneys assume their functions again in a very short time.

Delivery may be effected in one of three ways: (1) By the introduction of a sound or catheter inserted between the uterine wall and the membranes; (2) by Cæsarean section; (3) by rapid artificial dilatation of the cervix with the fingers or with a special dilator. Demelin condemns the first method as old-fashioned and unsatisfactory, because eclamptic patients are generally primiparæ. Cæsarean section is not to be recommended, the mortality of the cases on record being as high as 50 per cent. The third and only remaining method is not free from difficulties and dangers. There are risks of tearing the cervix, of spasmodic hour-glass contraction of the uterus, and of septic infection. Theoretically, the emptying of the uterus will involve a lowering of blood pressure and a relief for the kidneys; but we must remember that there are also post-partum eclampsias, which are very apt to be fatal. Out of 160 cases of eclampsia collected by Demelin, 26 per cent. died after spontaneous delivery of the fetus, 25 per cent. after extraction with forceps through a naturally-dilated os, and 44 per cent. after delivery through an artificially-dilated cervix. The average mortality among mothers with eclampsia which has not been obstetrically treated is from 20 to 25 per cent. Thus there seems very little to be gained from obstetrical treatment, and the only safe teaching is *primum non nocere*.

Deciduoma in Non-gravid Fibroid Uterus.—Sippel (Monats. f. Geb. u. Gynäk.) reported before a medical society

a case which gave rise to much discussion. He removed a fibroid uterus from a woman, aged thirty-two, who had been three times pregnant. Her last pregnancy, three years before the hysterectomy, ended in abortion at the second month, and since then the patient never had the least sign of gestation. The tumor was a collection of myomata, but on the surface of the mucous membrane lining the posterior part of the uterine cavity was an area measuring about 1 1-2 inches by 2 inches, raw and bleeding, and circumscribed by healthy mucous membrane. This raw tissue went deep into the muscular coat. The clinical symptoms, besides the existence of the tumor, had been profuse, but perfectly regular, menstrual hemorrhage, without any intermediate discharge of pus or mucus. The new growth on the mucous membrane appeared on microscopical examination to be a tumor of the deciduoma type, strongly resembling microscopically metastatic growths in a case of hydatidiform mole recently under von Herff's observation, defined by Wallart as "atypical chorion-epithelioma." Schottlander believed that Sippel's case was an instance of hemangeio-endothelioma, and after others expressed some doubts about the deciduoma theory, von Rosthorn declared that it was not always easy to distinguish the two kinds of tumor. He considered that he had much to learn about endothelioma associated with fibroids.

Sarcoma of Vagina in Childhood. Rollin (*Revue de Gynéc. et de Chir. Abdom.*) has prepared a monograph on this very malignant type of new growth; twelve clinical records are collected, including two cases (Le Dentu, Aubert) published within the last two years. As has been already recognized, it differs from the less definite forms of sarcoma of the vagina in the adult in that it tends to become racemose and pedunculated, although in its earliest stages it appears as a smooth convex swelling on the vaginal mucosa. In the great majority of cases it is the anterior vaginal wall that is the seat of disease. A big, malignant mass develops very soon, and may invade the cervix; as to diagnosis under these circumstances, Rollin notes that polypoid primary sarcoma of the uterus is up to the present date unknown in childhood. The bladder, parametrium, and appendages become involved, pyometra may be set up and cystitis not rarely develops, owing to infection through the urethra, the discharge from the growth being very septic. Distant metastases are not frequent. This kind of tumor often causes no symptoms so long as it remains intravaginal and before it takes on free proliferation, hence it is usually detected too late for treatment. Recurrence after excision may be very rapid—ten days in one case (Rabé); Schuchardt's patient underwent a second operation, yet was living ten years later, whilst in several cases of recovery after operation the after-history is defective. Bleeding is the first and most important symptom,

and it is followed by pelvic pain, constipation, and dysuria. The appearance of the racemose mass in the vulvar cleft and the definition of its attachment to the vaginal mucosa render diagnosis easy when the disease has probably advanced too far to allow of operation.

Lactation and Menstruation.—Heil (*Monats. f. Geb. u. Gyn.*) has made some researches which tend to confirm the opinion of Remfry and others on this subject. Out of 200 women under Heil's observation during lactation 24 became pregnant (12 per cent.), one woman conceiving twice when suckling, one "several times," whilst one invariably conceived before weaning. It is important to note that 17 of these 24 who conceived during lactation had likewise begun to menstruate during lactation, whilst in only 7 had the catamenia not returned; Heil, however, reminds us that Remfry gives a lower proportion, as the British observer found that if absolute amenorrhea be present during lactation, the chances of impregnation are only 6 in 100. Heil, in conclusion, finds that about half only of all suckling women have absolute amenorrhea. The appearance of the catamenia during lactation is not a reason for weaning the child, nor is it necessarily followed by suppression of milk. The longer that suckling is continued after the fourth month the higher is the chance that menstruation will return. In individual cases the cause of the reappearance or absence of menstruation during suckling cannot always be made clear; a considerable proportion of women may menstruate during lactation on one or more occasions, yet not on other occasions. Heil, like Thorn, believes that Menstruation, not amenorrhea, during lactation is the original normal condition with women.

Post-partum Appendicitis.—Michel (*La Prov. Méd.*) thinks appendicitis a rare complication of pregnancy which, when it occurs after delivery, makes the diagnosis between puerperal infection and appendicular infection difficult. Pinard finds that all post-partum appendicitis has been preceded by a previous attack either before or during pregnancy. It occurs generally in young women; the appendicular crisis may arise during pregnancy or after labor, but is most frequent from a few days to three weeks after delivery. It may be due to local causes, such as traumatism. During the later months of pregnancy the gravid uterus may bruise the tissues in the ileo-cecal region, these tissues being at this time less resistant owing to the changes in the pelvic and abdominal vascular supply. Many women suffer from constipation and fecal accumulation, which favors the development and increases the virulence of the *B. coli*. Pregnancy and delivery tend to light up old inflammatory trouble, and to break down adhesions which have been shutting

off old residual abscesses. When delivery has been difficult it may be followed by slight uterine sepsis with secondary infection of the appendix, or infection may be due to a general sepsis. If a woman who has been recently confined has a high temperature without apparent cause it is advisable to investigate the past history thoroughly for previous attacks or anything approaching to such attacks. The symptoms are as usual, acute pain in the right iliac fossa, a rise of temperature, rapid pulse, vomiting, and furred tongue. The peritonitis is either generalized or localized and suppurative. In women, owing to the low position of the appendix, it is not uncommon to find it causing a localized pelvic peritonitis.

A typical appendicular attack occurring ten days after a normal confinement is not difficult to diagnose, but after a difficult labor with, perhaps, prolonged manual interference, the supervention of fever with a tender uterus, abnormal lochia, and vomiting, may easily be attributed to uterine infection, and a treatment undertaken which will only serve to aggravate the situation. Care should be taken to eliminate pneumonia, lymphangitis, and mammary abscess, all of which have been known to simulate appendicitis.

The condition of the cervix is an important diagnostic point; if it is closed and firm the uterus is healthy, if it is patulous the uterus is infected or doubtful. If the uterus and its appendages appear healthy and do not correspond with the general symptoms, the cause of the illness probably lies elsewhere. If the uterus is doubtful the ordinary treatment for uterine infection should be instituted; the symptoms will subside rapidly in a case of endometritis, but remain unabated in appendicitis.

Local examination determines the diagnosis of later manifestations of puerperal infection, such as pelvic peritonitis, perimetritis, or salpingitis. In diagnosing appendicitis one must be influenced by the previous history, the predominance of symptoms on the right side, and the unilateral character of the lesion. Pelvic appendicitis is associated always with swelling in the right iliac region and pain on pressure, whereas salpingitis is exclusively pelvic. The alarming symptoms due to constipation in the recently delivered woman may simulate appendicitis, but the pain is less severe. Cases of entero-colitis, cholecystitis and pyelonephritis have been recorded as sequelæ of confinements. The prognosis of post-partum appendicitis is serious. Michel considers that there are many reasons for advocating surgical treatment, and points to the excellent results obtained by early interference.

Kraurosis Vulvæ after Hysterectomy.—Jayle and Bender (Bull. et Mém. de la Soc. Anat. de Paris) report two cases of this disease following in one instance a vaginal, in the other an abdominal hysterectomy. The clinical and pathological

features of the cases are minutely described. Both patients were forty-three when under Jayle and Bender. The first was a sterile married woman; the uterus had been curetted nine years previously, and three years later Segond removed it through the vagina. Symptoms attributable to absence of ovarian substance set in, and the patient again came under hospital treatment three years after the hysterectomy. She declared that pruritus vulvæ began a few months after the removal of the uterus. At last vulval irritation became intolerable, and dyspareunia caused intense pain, so she consulted Pozzi and came under Jayle and Bender's observation. The growth of hair around the pudenda had been affected, each hair was short and weak. The labia majora were quite normal, as was the clitoris, whilst the labia minora were much shriveled and thinned, the right being the most diseased; the introitus was contracted and tough, its mucosa marked with red spots which temporarily disappeared on pressure. Introduction of the finger into the vagina caused great pain, as it was much contracted and dense cicatricial tissue had formed at the seat of the hysterectomy.

The second patient was also a sterile married woman. She had contracted syphilis when eighteen years of age, but had apparently been cured. Seven years before she came under observation Pozzi performed abdominal panhysterectomy for fibroid disease. Then flushings, loss of memory, depression of spirits, and other symptoms of ovarian insufficiency followed. At length pruritus and dyspareunia were added to the patient's torments, and she came again under Pozzi. Jayle and Bender, who examined the case, found no alteration in the pubic hairs and labia majora and minora. There were characteristic red spots of the mucosa of the vestibule, which was much contracted; the vagina was very narrow. Pathological examination of the cases proved that the disease was kraurosis and not vulvar leucoplasia. The first patient was still under treatment. In the second case, a piece of mucous membrane, the seat of a painful red spot, was excised, and the pain and dyspareunia ceased, but two months later another red spot had to be excised.

Primary Cancer of Fallopian Tube.—Rollin (Ann. de Gyn. et d'Obst.) observed bilateral primary epithelioma of the tubes in a woman aged forty-six, with no history of cancer in her family. One child was born sixteen years before the operation on the morbid growths, and there was a history of metritis and salpingo-oöphoritis four years after her only pregnancy. For about a year the patient suffered from dull hypogastric pains, accompanied by very free discharge of a tea-colored fluid, watery and odorless. The periods were regular and a little less free than before the illness, but paroxysms of sharp pain oc-

curred during the catamenia. Micturition was painful. A tender swelling rose three fingerbreadths above the right groin, and descended into the pelvis; on vaginal exploration a second swelling was detected in the left fornix. The uterus was anteverted and fixed. Riche removed the two tumors, with the uterus and ovaries. The right was a dilated Fallopian tube of the size of an orange; the left was the opposite tube, distinctly smaller. Both contained chocolate-colored fluid, and cauliflower masses of epithelial cancer sprang from the walls of the tubes. The ovaries were absolutely healthy. The patient recovered from the operation, and was discharged from hospital at the end of January, 1905.

Fatal Post-partum Hemorrhage from Laceration of the Clitoris.—Hemorrhage during and after labor is in the great majority of cases of uterine origin, and the possibility of another source is apt to be forgotten. E. Kossow-Gerronay (Wien. klin. Woch.) was at 7.45 a. m. summoned by a midwife to a case of *post-partum* hemorrhage. Labor had been precipitate, and the child, which was born at 7.15 a. m., was rapidly followed by the placenta. Profuse hemorrhage immediately followed, according to the midwife, because the uterus did not contract well. The uterus had been kneaded and managed. The woman was extremely pallid and restless, and the pulse was imperceptible. Two hyperdermic injections of ether were given, and while the midwife continued to rub the uterus the vulva was examined. After removal of some clots, dark blood was seen to be issuing from a laceration $1\frac{1}{2}$ cm. in length and 7 mm. in depth, which was situated between the clitoris and the external orifice of the urethra, and had opened up the blood spaces in the corpus cavernosum. No spouting vessel was found, possibly because the heart's action was rapidly failing. A tampon was pressed on the wound and some sutures were inserted, but before the operation was completed death occurred. As hemorrhage had continued from this wound for at least half an hour, the fatal issue was not surprising. It could, if the source had been recognized, have been sufficiently controlled by pressure until the arrival of a practitioner. Such lacerations *intra partum* are not common, and usually occur in primiparæ. This patient was a secundipara. Hemorrhage can be controlled by placing the finger on the bleeding part and compressing it against the pubes.

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THE TOXEMIA OF PREGNANCY.*

BY F. W. HAMLIN, M. D.

Two cases of this interesting condition occurring in my practice during the last year have so impressed me that I am moved to narrate the cases to this society and to make some observations upon the topic of this paper in general. The first of the two cases came under my care in the latter part of July, 1904. She was then a little more than five months pregnant. She had suffered from the usual nausea and vomiting of pregnancy, but not to an abnormal degree. At the time when I was called to see her in consultation albumin in considerable amount had been discovered in the urine, and the total amount of urine for twenty-four hours was below normal. There were no other significant symptoms, beyond a slight amount of swelling in the ankles and a slight puffiness around the eyes. Her family history was excellent, and she gave no history of serious illness since childhood. She had measles and scarlet fever as a child, but had always enjoyed excellent health during her girlhood. I prescribed broken doses of calomel followed by a saline to increase the action of the liver, and an absolute milk diet.

* Read before the Homeopathic Medical Society of the State of New York, February 3, 1906.

Some relief followed these measures, but albumin persisted in large amount and the edema increased. Subsequent examinations of the urine showed hyaline and granular casts, red blood corpuscles and some pus. On the 4th of September she was delivered spontaneously, of a seven months' child. The child was dead and maceration had begun. After the delivery the amount of urine increased greatly and in three days the edema entirely disappeared. On the fourth day after delivery her pulse became very rapid and irregular and an enormous hypertrophy of the liver developed. On the right side the lower border of the liver could be palpated four fingers' breadth below the umbilicus. Owing to the rapid action of the heart, dyspnea was very pronounced and distressing. The action of the kidneys at once became embarrassed and the edema around the ankles and in the face again became pronounced. During this time she was under the care of her regular physician and I did not see her until my return to the city on the 20th of September. I was called to see her in consultation upon that date and found her in a very serious condition. The pulse was about 140, very weak and extremely irregular. The edema had extended to the knees and the abdomen had begun to fill up. The liver was of enormous size, and the dyspnea so extreme that she could hardly lie down. Sleep was almost impossible. The one redeeming feature of the case was the fact that she could take nourishment and retain it. It seemed to me that the heart was the organ that most needed treatment and I accordingly prescribed for her the fluid extract of *convallaria majalis*, five drops in water every three hours. The effect of this medicine was soon manifest in bringing the pulse down to 120 and increasing the excretion of urine from 15 ounces per diem to 30 ounces. She was taking liquid diet only, but retained everything and the movements of the bowels were satisfactory. Her dyspnea decreased so that some sleep was obtained. Under *convallaria* increased to ten drops every three hours, she was fairly comfortable for about two weeks, then improvement stopped, the urine decreased and the dropsy rapidly increased. Thiocin was tried as a diuretic, but the effect upon the mental sphere was so pronounced that it was discontinued. Finally the Niemeyer pill, composed of powdered digitalis, calomel and squills, each one grain, was administered. The dropsy

had become so severe that the abdomen was tapped and 63 ounces of fluid removed. Under the Niemeyer pill improvement was manifest at once. The heart's action became more steady, the excretion of urine was markedly increased, the dyspnea was less pronounced. I might mention in passing that this dyspnea at times assumed almost a Cheyne-Stokes type. During the winter at one time she developed very suddenly complete consolidation of one lung, which was evidently hypostatic and which cleared up in a few days under phosphorus. After the tapping the edema never reappeared to such a marked degree in the abdomen, and under the action of the pill above mentioned the dropsy in the legs and in the face rapidly diminished, leaving her extremely emaciated. The urinary analyses all this time pointed to the existence of a true nephritis, and the liver continued very large. All the consultants who saw the case, and I had eight or ten, were unanimous in the opinion that there was no possible chance of recovery. However, in the spring improvement became more pronounced, the liver began to decrease in size, the condition of the kidneys steadily improved and finally became normal, and the heart finally became regular in its action, although somewhat dilated and hypertrophied. I dismissed my patient in May, when she took a long railroad journey to the West. Since that time I have heard from her frequently, and she continues to gain in health and strength and is apparently perfectly well. I have narrated this case at considerable length as it was to me, and to other physicians who saw the case, extraordinarily interesting and instructive.

I consider the case a typical illustration of the toxemia of pregnancy of the sub-acute type. The kidney condition was that of the kidney of pregnancy, although apparently a true nephritis existed. The value of eliminative treatment is strikingly illustrated by this case. I would remark also that though she took the pill mentioned three and four times a day for periods of three weeks at a time, there was at no time evidence of salivation to any marked extent. The indicated homeopathic remedy was administered according to the symptoms presented. *Mercurius corr.*, *cantharis* and *apis* for the kidneys, *tartar emetic* and *phosphorus* for the lung condition, and *lachesis* and *spigelia* for the heart, but the remedies that appeared to be most

effective were the convallaria and the Niemeyer pill. The second case came under my care about June 1, 1905; a young woman of 25, in her second pregnancy, suffering from severe nausea and vomiting. Her first pregnancy, two years before, was terminated by the induction of labor at the third month for uncontrollable nausea and vomiting, and she barely escaped death at that time. Nausea and vomiting to some degree occurred almost from conception in the second pregnancy and became severe at the second month. Her diet was carefully regulated and she was kept in the reclining posture most of the time, as motion of any kind aggravated the nausea. The nausea and vomiting were controlled to some extent, so that the patient was fairly comfortable up to the 10th of July. Then the nausea became so severe that but little nourishment could be retained. An examination of the urine at this time showed 1-9 of 1 per cent. albumin; urea, 1 1-10 per cent.; a moderate number of hyaline and granular casts; no pus and no blood; specific gravity, 1015. A consultation was held and it was decided to try rectal feeding and the use of saline injections and to stop all stomach feeding. For the next ten days this plan was adopted. The patient retained all the nutritive enemata, her pulse came down below 100 and the nausea subsided. Stomach feeding was then resumed and for five days practically all nourishment was retained. The quantity of urine increased, although the amount of albumin slightly increased and the casts were still present. On the 29th of July, the patient complained of a dimness of vision in the left eye. She could, however, count fingers at a distance of six feet. An oculist was summoned and an examination of the eye showed a hemorrhage into the retina, an albuminuric retinitis. A second oculist found under atropine that there were two distinct hemorrhages into the retina. Obviously there was nothing to do but to terminate the pregnancy. Accordingly the uterus was emptied on the 30th of July. The patient, however, did not improve to any appreciable extent after the operation and on the second day began to vomit a black coffee-ground material, showing the disorganization of the blood. She was completely unconscious for thirty hours before her death, which occurred on Thursday morning, August 3. These two cases illustrate some of the problems which we are called upon to solve in the

treatment of the condition known as the toxemia of pregnancy. Dr. James Ewing, professor of pathology in the Cornell University Medical College, has devoted seven years of his life to the investigation of this interesting condition and I desire to state briefly some of his conclusions. Dr. Ewing believes that most of the special morbidity of pregnancy is due to an auto-intoxication. He has never failed to find lesions of the liver after death from pernicious vomiting. He also finds that whenever there are symptoms during life of marked hepatic insufficiency, the urine will show evidences of perverted metabolism. In the light of our present knowledge, the toxemia of pregnancy may be defined as a state of the blood and metabolism arising from the hepatic insufficiency to which the pregnant woman is strongly predisposed. The organs chiefly affected are the liver, kidneys and spleen. The lesions of the liver are at first of the nature of fatty degeneration. Necrosis is a later development and acute yellow atrophy is the terminal stage in fatal cases. In the kidney various manifestations appear. The specific kidney of pregnancy appears under a variety of forms, and it may be complicated with a true nephritis. In high degrees of toxemia leucin and tyrosin are found in the urine. These bodies result from destruction of liver tissue.

The spleen is affected in the same manner as the liver. The lesions in this organ are believed to account for certain mysterious examples of anemia and leukemia, which develop after the lying-in period. The etiology of toxemia depends upon three sets of factors:

(1) Conditions which predispose to hepatic insufficiency. Under this heading are included pregnancy itself, heredity and a previous history of toxemia.

(2) Accessory factors which tend to modify the disease and cause it to assume special clinical types. These causes are nervous instability, the menstrual epoch, mechanical factors.

(3) Actual toxic substances in the blood.

Pregnancy itself is doubtless the cause of the strain thrown upon the liver. To the direct drain upon the liver to prepare the material for the growth of the embryo must be added the influence of suppressed menstruation, which is believed to cause congestion of the liver. As pregnancy advances the risk increases. The pregnant woman, after the ordinary nausea and

vomiting subsides, develops a vigorous appetite, and is apt to eat large quantities of nitrogenous food. The growth of the uterus and the ovum adds to the work of the liver. The increased abdominal pressure must hamper the liver, while the usual constipation of pregnancy favors the absorption of putrefactive products. To all these dangers must be added the possibility of some bacterial infection.

Treatment.

From the etiology of the disorder, it is evident that the treatment must be mainly eliminative. The essential feature is an auto-intoxication which must be combated by stimulating all the excretory organs, such as the liver, kidneys and the skin. Some method of diluting the toxins in the blood is also of great importance. The method usually employed has been by saline injections into the bowel. Ewing in a recent article remarks upon a case in which copious saline injections had been given, but on autopsy it was discovered that the intestines had failed to absorb the fluid. He, therefore, advises saline infusion directly into the circulation, both to eliminate the poisons and to dilute the blood. He recommends Ringer's fluid as far more useful for this purpose than the ordinary saline solution. The composition of Ringer's fluid is as follows:

Sodium chloride	7 grams.
Calcium chloride	2 "
Potassium chloride	1 "
Sodium bicarb.	1 "
Aquæ destillatæ	1000 c. c.

This solution is best prepared with distilled water recently boiled, and the salts must not be heated enough to decompose the sodium bicarbonate at the time of using.



CELIOTOMY DURING PREGNANCY—SIX CLINICAL CASES.*

BY JAMES C. WOOD, A. M., M. D.

Case I.—In September of 1888 I was called in consultation with the late Dr. R. J. Cummer to see a woman six months pregnant, whose abdomen was enormously distended because of a 15 pound ovarian cyst springing from the right side. She was threatened previously to operation with miscarriage. I had the patient immediately removed to the hospital and operated on the following morning. The abdomen was opened through a short median incision, the cyst tapped, numerous adhesions broken up, the pedicle tied off and the abdomen closed. The patient recovered from the operation without the slightest difficulty, returning home in two weeks, and at the end of her period gave birth without complications to a healthy male child.

Case II.—In August of 1905 Mrs. —, æt. twenty-two, came to me three months pregnant with symptoms of appendicitis. She had constant pain in the right side in the region of McBurney's point. The appendix could easily be palpated and outlined as a hard indurated mass lying across the iliac vessels. She had been my patient some years previously as a young girl and another physician had made the diagnosis of appendicitis. She came to me for my opinion and, were operative interference necessary, an operation. She had made several attempts to empty the uterus by introducing a probe. She made me promise that if the fetus was dead I would empty the uterus at the time of the appendicectomy.

On August 30, 1905, the abdomen was opened through a short median incision and the appendix removed in the usual way. To all appearances the uterus contained a viable fetus and I, therefore, did not disturb it. The abdominal wound was closed by means of two running catgut sutures and a subcuticular silkworm-gut suture. The patient was home in two weeks. She went through her period of gestation normally and was delivered in March of this year of a perfectly healthy girl baby. The only thing peculiar about her gestation was that the abdominal wound became as black as the skin of a

* Read before the Ohio Homeopathic Medical Society, May, 1906.

negro from the unnatural deposit of pigment. The patient is a decided brunette.

Case III.—In December of 1905, Mrs. U., æt. forty-five, came to me, giving the following history: Menstruation regular every four weeks; flow somewhat excessive; no disturbance of digestion; emaciation and constant pain through abdomen; leucorrhea and nervousness. On physical examination the cervix was found everted, being badly lacerated, thickened and indurated, and presented microscopically all the characteristics of carcinoma. The uterus was enlarged and heavy. With the menses regular and her youngest child twenty years of age I did not suspect pregnancy. The cervix was so suspiciously diseased that total ablation of the uterus seemed the only procedure justifiable.

Accordingly on December 15, 1905, the abdomen was opened and the entire uterus removed. The ovaries were hard and the appendix was thickened. Both the ovaries and the appendix were therefore removed. The uterus contained a three months' fetus. The gall-bladder was palpated because there were suspicious symptoms in that locality, but it was found normal. The abdomen was closed with two layers of catgut, silkworm-gut tension sutures and a subcuticular silkworm-gut suture. Convalescence was ideal and the patient returned to her home in the interior of the state in four weeks. She writes me that she is rapidly gaining in strength and is feeling comparatively well.

Case IV.—In February of 1906 I operated upon Mrs. H., æt. forty-two, making a supravaginal amputation of the uterus for a fibroid complicated by pregnancy. The patient began to vomit almost from the beginning of pregnancy. She was prostrated to an extreme degree and the emaciation was profound.

I returned home from my mid-winter vacation on the morning of the operation and found her with a pulse of 130. Examination of the urine showed nothing abnormal. I was not sure of my diagnosis because the history of pregnancy had been irregular. Some six weeks following its inception there were symptoms not unlike those of ectopic pregnancy. She was at that time taken with pain in the abdomen with symptoms of shock and collapse. She had been under the care of a most excellent practitioner and it did not seem wise longer to pro-

crastinate surgical interference. An irregular hard mass could be felt in the lower zone of the uterus.

On February 28, 1906, the abdomen was opened and a fibroid the size of the double fist found just above the cervix. Numerous other fibroids were found in the uterine wall. The uterus had the characteristic appearance of pregnancy. The ovaries were both extensively diseased and it seemed best to make a supravaginal amputation of the uterus with the appendages. This was done as expeditiously as possible because of the patient's prostrated condition. The appendix was as large as the index finger and filled with a colloid material (cystic distention). It was impossible, because of the size of the appendix, to deal with it in the usual way by amputation and inversion. It was therefore removed between two intestinal forceps, the proximal end being closed with a continuous catgut suture embracing all of its coats, supplemented with a continuous Lembert silk suture which approximated the peritoneal surfaces. The abdominal wound was closed in the usual way. The patient's convalescence was entirely satisfactory until the end of the fifth day when vomiting recurred. The urine became scant and in spite of every effort to re-establish the function of the kidneys it became completely suppressed, and she died from exhaustion and uremic complications at the end of the seventh day.

Case V.—On the evening of April 25, 1906, I was requested by Dr. R. Pomeroy to see with him in consultation Mrs. S., æt. 28, who had been married one year. She was the picture of health, had never been ill, had no pressure symptoms, the bowels were regular, there was no disturbance of the urine, and no menstrual irregularity, except that her last period occurred six weeks from the one preceding it. She then passed a clot of blood and had some uterine tenesmus. The day that she called her physician she accidentally discovered, while palpating the lower abdomen, a mass of some kind which led her to seek medical advice. Physical exploration disclosed a tumor extending nearly to the umbilicus, which filled the entire pelvis and which crowded the uterus so far above the pubic arch that it was almost impossible to reach the cervix. I thought she was pregnant from her symptoms, but was not sure. At any rate the condition called for operative interference. My

engagements were such that I told the patient that it would be impossible to operate before the following Monday, unless I operated on the morning following my visit, at which time I had another celiotomy. The patient insisted upon being taken to

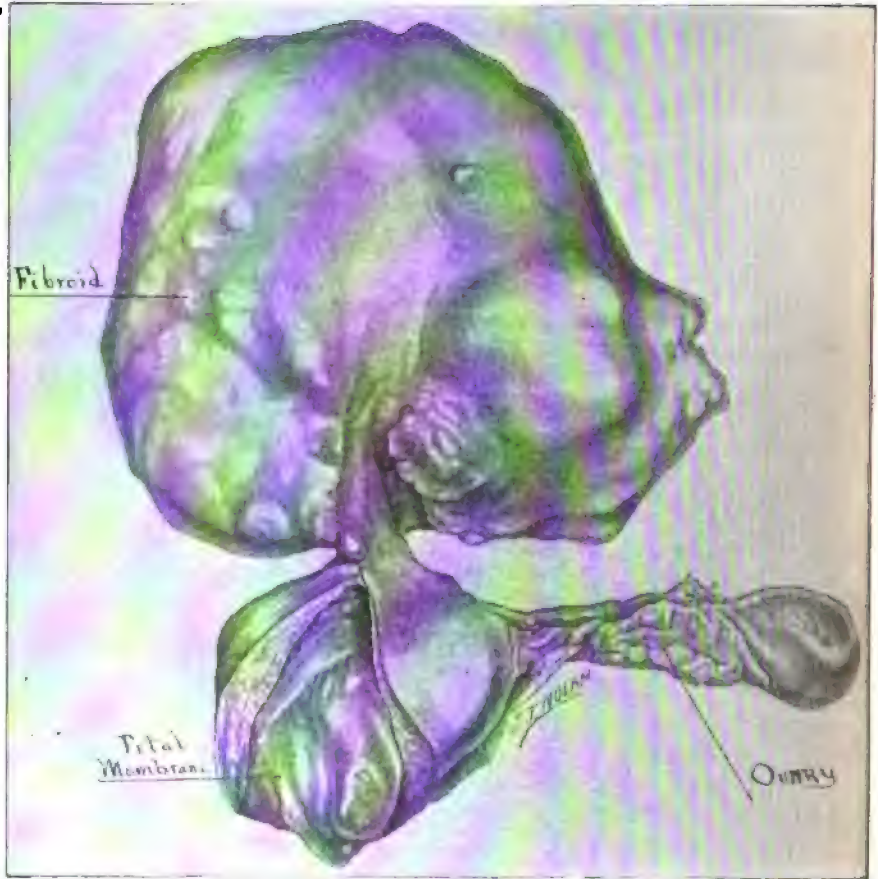


Fig. 1.

the hospital at once, so that I saw her at 8 o'clock on the evening of Wednesday and at 8.30 Thursday morning had her under an anesthetic on the operating table. She was placed in the Trendelenburg posture, and when the abdomen was opened I found that active bleeding from some source was going on. I quickly enlarged the incision, eviscerated the tumor and uterus and found that the hemorrhage proceeded from a laceration of the pedicle, the result of the patient being placed in the Trendel-

enburg posture. The left ovary was diseased, but the right ovary was normal. The uterus was enlarged and contained a fetus. Besides the larger fibroid, which weighed five pounds, there were several smaller ones projecting from the uterine wall. I did not deem it wise to undertake to save the uterus, which was probably septic. It would have been necessary to enucleate at least eight or ten small fibroids as well as the larger one, had this been done. I deemed it safer and better surgery to remove the uterus with the fibroid, leaving the right ovary behind (Fig. I). This was quickly done by the transperitoneal method and the patient was removed from the table in good shape. She has not had a bad symptom and this morning I removed all tension stitches, to find the wound in most excellent condition. The uterus was incised after its removal and a fetus of about two months, with the membranes intact, was found within its cavity.

Case VI.—I presented at the 1905 meeting of the Surgical and Gynecological Association of The American Institute of Homeopathy, a case of pregnancy complicated by the presence of an ovarian cyst which was so interesting that I venture briefly to call your attention to it.* The patient was twenty-two years of age and had one child three years of age. She was four and one-half months pregnant in the second pregnancy. Dr. E. O. Adams, of Cleveland, was called to see her March 9, 1905. She gave a history of having had during the two months preceding the time he first saw her, three attacks of what her attending physician had diagnosed as "renal colic." At that time she presented the following symptoms, which persisted up to the time the doctor saw her. There was severe pain beginning in the region of the left kidney, extending down into the groin of the corresponding side, involving the neck of the bladder, vulva and right of the thigh; frequent desire to urinate with passage of a small amount of urine which contained pus and renal cells. The usual treatment for the relief of the pain was instituted with but temporary relief. The pain was so severe that for three days preceding the operation it became necessary to give hypodermatically two grains of morphine every twenty-four hours. The doctor found upon physical examination at this time a tumor in the left hypochondriac region close under the costal margin. This tumor was slightly mobile, but could not be pushed down into the pelvis. It was smooth and seemingly cystic to the touch. A diagnosis of a probable hydronephrosis as a result of ureteral obstruction was made. On the morning of March 17th the temperature began to rise and the thermometer registered 100.4° F. She was taken to the hospital on this day and turned over to me.

* *Hahnemannian Monthly*, July, 1905.



Fig. 2.

Examination without an anesthetic showed no evidence of the tumor springing from the pelvis, although the size of the uterus made it impossible to make a bimanual sufficiently well to outline the pelvic attachments of the growth. The symptoms pointed so clearly to a pyo- or a hydro-nephrosis that I deemed it best to make an exploratory incision over the mass. I did not feel sufficient confidence in my diagnosis to explore through the back. On opening the abdomen over the mass there was found a bluish tumor the size of an adult head, with a pedicle leading down into the pelvis, which felt exactly like a distended ureter (Fig. 2). Effort was made to draw off the fluid by aspiration, but it was so thick that it would not pass through the aspirating needle. After closing the puncture made by the needle with a circular catgut suture, the incision was enlarged and the tumor delivered *en masse*. It was in front of the colon and pressed hard against the diaphragm. The omentum was adherent to the tumor, which was twisted upon itself to the left six times. The pedicle was eight inches long and black from necrosis. All the necrotic tissue was cut away and the stump cauterized and covered with peritoneum. The wound was closed with interrupted silkworm-gut sutures. The patient was removed from the table in good shape and her convalescence was ideal. She had no bad symptoms and at no time did the uterus threaten to empty itself.

This case is interesting because it shows the difficulty of differentiating an ovarian cyst with a long pedicle from a tumor of the kidney. The pregnancy complicated matters in that it was difficult to trace the pedicle down into the pelvis because of the size of the uterus. The twisting of the pedicle undoubtedly gave rise to the inflammatory symptoms which were present, and the symptoms which so closely resembled renal colic. It is more than probable that the urinary symptoms were purely incidental. Their presence made me so sure of a kidney lesion that I did not do what perhaps it would have been well to do, namely, collect the urine from each kidney separately. This at least would have been a refinement in diagnosis, but I do not think that the necessity of so doing in this case appeals to the practical surgeon very strongly. The facts are that there was an intra-abdominal growth of some kind, just below the diaphragm and in the region of the kidney, which was giving rise to serious inconvenience and menacing the life of the patient. The indications were clearly to explore and relieve the patient of her condition if possible. The patient at the end of her period gave birth to a perfectly healthy male child.

Remarks.—I have presented for your consideration the brief history of the six foregoing cases because each case represents a type with which the abdominal surgeon is liable to meet at any time.

Case I shows the possibility of dealing with a fairly large cyst, complicated with adhesions, without interrupting pregnancy.

Case II shows, I think, the safety of operating upon the appendix during the period of gestation. The uterus was not emptied here, even though the patient had made several attempts to do so by introducing into it a probe.

Case III represents one presenting most confusing factors in diagnosis. A subsequent examination of the cervix showed it to be malignant beyond question. In dealing with a woman of forty-five who was perfectly regular, who had not had a child for twenty years, whose uterus was enlarged, but who presented none of the other symptoms of pregnancy, the best diagnostician in existence is liable to be confounded. The pregnancy seemed in no wise to interfere with her convalescence. I feel that I did right in removing the entire uterus with its appendages.

Case IV interests me because of the fact that the patient, notwithstanding her extremely prostrated condition, stood the primary shock of the operation fairly well, only to succumb several days later to renal insufficiency. The question suggests itself as to whether the excessive emesis was due to inability of the uterus to expand because of the fibroid's presence, to the condition of the intestine which was more or less obstructed by the cystic distention of the appendix, or to the renal insufficiency which eventually destroyed her life? That the vomiting entirely ceased for five days after the operation seems to argue that one or both of the first two factors mentioned were primarily responsible for it. This theory is substantiated by the negative evidence afforded by the several analyses of the urine which were made. Renal insufficiency is, however, so often insidious that one is always in doubt as to the part it plays in disturbing the economy. As is well known, one may have it with an entire absence of albuminuria and urinary casts.

Case V is interesting in showing how it is possible for even a good-sized fibroid to exist without serious inconvenience. It also shows the danger that was hovering over this woman at all times because of the liability of the pedicle to become lacerated or twisted. The uterus was much better out than in and it is more than probable that, had I left it behind, a subsequent celiotomy would have been necessary because of the growth of the small fibroids.

It is not necessary to enlarge upon Case VI. I venture the assertion that nineteen diagnosticians out of twenty would have been misled by the symptoms, objective and subjective, which were present.

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PAINFUL URINATION.

BY J. J. THOMPSON, M. D.

Painful urination may be the result of: (1) The condition of the urine itself, as in acidity or alkalinity. (2) Foreign bodies in the bladder, as stone, blood clots, coagulated mucus, bits of pencil, straws, etc., introduced into the bladder through the urethra (mostly in insane people and in children). (3) The condition of the bladder as in ulcers, cancers and other tumors of the bladder, cystitis, etc. (4) The condition of the urethra as in ulceration, stricture and irritable urethra. (5) The condition of the adjacent pelvic viscera, as when there has been pelvic peritonitis or cellulitis with adhesions to the bladder, in which case any expansion or contraction of the bladder will pull upon the adhesions and cause pain.

The character, duration and time of the pain will often determine the nature of the lesion. As regards the time of the pain, it may be stated in a general way that *pain before urination* may indicate a diseased or hyper-sensitive condition of the bladder itself or of the viscera immediately surrounding it. If the bladder itself be hyper-sensitive, it usually indicates a diseased condition of the mucous membrane due to one of six causes. (a) Over-distention of the bladder from hyper-secretion or retention. (b) An irritating condition of the urine as in decomposition or acidity or alkalinity. (c) Ulceration of the bladder, simple or tuberculous, either with or without contraction of the bladder. (d) Vesical calculi coming in contact with an ulcerated or irritated mucous membrane. (e) Cancerous or tuberculous growths in the bladder. (f) Inflammatory conditions of the bladder, or cystitis. (g) Effects of drugs; cantharis, turpentine, etc.

Inflammatory condition of peritoneum or seminal vesicles, prostate, or cellular tissue surrounding the bladder often causes intense pain which is referred to the bladder and is increased by distention of that organ with urine. In some cases adhesions of the pelvic viscera to the peritoneal covering of the bladder cause a chronic soreness and pain in the bladder which is aggravated whenever the bladder is distended with urine.

Neuralgic conditions at the neck of the bladder are also aggravated by pressure of distention. Pain in the bladder before

urinating may also be reflex from diseased conditions or displacement of the kidney.

Pain during urination may indicate a diseased condition of the bladder, the prostate, the urethra, or the adjacent viscera. Diseased conditions of the bladder in which the pain is aggravated during micturition are cystitis, ulceration, stone or gravel and cancerous growths. In prostatic disease such as acute prostatitis, cancer of prostate, etc., the pains are aggravated during and especially toward the close of urination. In all forms of urethritis and ulceration of the urethra, and gravel in urethra, as also in balanitis, the pain is increased during urination.

Pain after urination may indicate an ulcerated patch near the neck of the bladder, irritated by contact of opposing surfaces, or stone at the *bas fond* pressed upon by the contracted walls of the bladder.

In some instances where the bladder is attached to other viscera the contraction of its walls causes pain for some time after urination, or until the bladder is fairly well distended again.

Where the pain is markedly lessened by urination it indicates that the pain is caused by distention of the bladder walls, or by the irritating quality of the urine, some one or more of the above conditions being present.

As regards the location of the pain, it may be stated that *pain located in the bladder itself* indicates that the lesion is located in the bladder or surrounding peritoneum, or is referred to the bladder by some lesion of the kidneys or ureters.

Pain in the prostatic and perineal region usually indicates some lesion of the prostate, prostatic urethra, seminal vesicles or Cowper's glands. Stone in the bladder and ulceration at the neck of the bladder cause pain which is often referred to the prostate and perineum.

Pain at the anterior urethra and glans penis usually indicates trouble at the neck of the bladder, especially if it is aggravated during the latter part of the act of urination. In some cases the pain may be due to a diseased condition just within the meatus, as in chancre, simple ulceration or obstruction at this point.

It may, therefore, be stated in a general way that pain along the urinary tract may indicate some one of the following lesions: (1) Acute or chronic cystitis. (2) Ulceration or fissure of the neck of bladder. (3) Stone in the bladder. (4) Cancer of the bladder or prostate. (5) Acute or chronic prostatitis. (6) Acute inflammation of the seminal vesicles or Cowper's glands. (7) Tumors of the bladder. (8) Retained urine. (9) Diseased conditions of the urethra. (10) Neuralgia of the neck of the bladder. (11) Inflammation of surrounding structures.

THE DRAINAGE OF WOUNDS.

BY SHIRLEY R. SNOW, M. D.,

Surgeon to the Rochester Homeopathic Hospital.

The old rule which says, wherever you find pus evacuate it, might well have the appendix, wherever you evacuate pus drain thoroughly. The surgery of to-day, however, deals more often with clean wounds, the success of treatment depends largely upon the method used in draining the cavities where blood or serum may collect and form pus.

The most important time in the healing of a wound is the first twenty-four hours, when blood may escape from the arterioles or the serum ooze from the surrounding tissue into a cavity. Bacteria will not live in dry surroundings, but the moisture of a wound forms the best culture media that we have. Therefore, if you would have your wound free from bacteria, keep it free from moisture.

Unfortunately the ideal drainage material is yet to be discovered. Decalcified bone, rubber tissue, rubber tubing and gauze all have their drawbacks, but by proper usage much can be accomplished with these agents.

It is not my purpose in this paper to exploit any discovery, but to collect in a brief form the more common methods and learn, perchance, by discussion some better way. To do this it seems most convenient to consider the wounds in relation to the portion of the body in which they occur.

Wounds of the head: Of the ordinary scalp wounds little need be said. The abundant blood supply makes the healing process simple and a few strands of silkworm-gut afford ample drainage. In cases of fracture of the skull where it is necessary to trephine, a strip of gauze is best left in situ, leading down through the skull. The dressing over this should be moist gauze, and in passing it is well to note that when we desire good drainage wet gauze will accomplish far more than dry. The piece of drainage gauze should be changed after thirty-six or forty-eight hours, keeping the opening through the scalp patent until the wound ceases to throw off fluid.

The wounds of the neck may be drained by the use of gauze, keeping in mind that when a cavity is packed it is better to

leave the packing three or four days until it can be removed easily. This is especially important where the drainage is near a large vessel. The general rule, that all cavities should be packed long enough to compel the wound to heal from the bottom, should be observed.

In the amputation of the breast two methods are used, first, which appears to me preferable (provided the wound can be covered with skin), is the use of the decalcified bone placed in a counter opening in the axillary line at the lowest point of the cavity. Some raise the objection to this method that the drain may become clogged, but my experience has led me to place confidence in this way, provided the wound is made dry and the dressing is so applied as to give even pressure over the entire wound. The advantage of this dressing is that it may be left untouched until the healing process is complete unless some contra-indication, such as rise of temperature, arises. The other method to which I refer is the use of strips of gauze inserted at intervals along the line or lines of incision, removing them on the second or third day and closing the wound with strips of adhesive plaster.

In operations upon the chest, rubber tubing half an inch in diameter makes a satisfactory drain. It is best to use two pieces placed side by side and fastened together by a safety pin so arranged as to prevent their being drawn into the cavity by the action of the lungs.

When we consider the abdomen, we have a cavity the importance of draining which thoroughly cannot be overestimated. The rapidity with which the peritoneum absorbs fluids makes it imperative to provide some means of removing them as fast as they are formed. The operations in the upper part are mainly those upon the stomach and gall bladder. The former as a rule require little draining, a strip of gauze running down to the site of operation generally sufficing. In the gall bladder cases, where the bladder is fastened to the edges of the wound, a rubber tube is passed into the bladder and then strips of gauze gently packed around it. The gauze may be removed on the third or fourth day and the tube left in until the wound in healing pushes it out. After taking out the gauze it is well to pack in a little at each dressing so long as the size of the opening allows it.

The lower part of the abdomen furnishes us with the always interesting appendix and the operations upon the pelvic organs, which require more nicety in arranging the drainage than any other part of the body. In operations upon the appendix many prefer the cigarette drain, made of gauze or wicking surrounded by rubber tissue. I feel that there is one serious drawback to its use. The rubber loses its life in sterilizing or by age, becoming brittle, and is liable to break off in the abdomen, making an unpleasant complication. The advantage of this drain is that it can be withdrawn without causing pain. If it seems best to use the rubber tissue, it is better to cover over the edge of the wound where the gauze is more apt to adhere and then use strips of gauze without the rubber tissue enveloping them. A very good substitute for the rubber tissue is made by the rubber tube passing gauze through it, which in effect forms a cigarette drain without the above mentioned danger. In using rubber tubing in the abdomen, if it is fenestrated, care must be taken to change its position at intervals so that the wall of the intestine will not be drawn into the fenestra. Again the tubing should be withdrawn and cleansed at the end of three or four days and replaced if necessary. In some cases of appendiceal abscess it has seemed wise to make a counter-opening in the lumbar region and drain by means of rubber tubing. The method that has proved to be most efficacious in my work has been by the use of the so called "handkerchief" drain. The center of the gauze square should be carried well down into the cavity; if the appendix has dipped down into the pelvis, then the gauze should follow down its course; then the inside of the handkerchief should be stuffed with strips of gauze. I use the word "stuffed" advisedly, for the more gauze used the better the drainage. Alongside of the handkerchief drain should be passed a rubber tube half an inch in diameter, reaching down to the bottom of the cavity. This tube serves two purposes, it prevents the edges of the wound from contracting upon the drain and stopping the absorbing action of the gauze and also affords exit for any gases that may collect. To make the handkerchief drain successful we must follow it up by placing over it moist gauze, moistened preferably with a solution of bichloride 1 to 5,000. This dressing should be changed down to the drain every two or three hours

for the first day, and then every six hours until the discharges stop. On the third day the tube can be removed and the gauze started. As a rule the gauze will not draw out readily before the fourth or fifth day. It will do no harm to leave it longer if the temperature does not rise. Should there be a rise in temperature, the gauze should be withdrawn and replaced by a strip of fresh gauze. All this must be done under antiseptic precautions as the omentum is liable to follow the gauze or sometimes a knuckle of intestine will crowd up into the wound. These must be carefully replaced and held back by gauze. The handkerchief drain is less apt to form obstruction of the bowels than the separate pieces of gauze run in different directions among the intestines. I believe by the use of a properly adjusted handkerchief drain and wet gauze dressing many a case can be saved that would otherwise add to our mortality list.

One would think that the pelvic portion of the abdominal cavity could best be drained *per vaginam*, taking advantage of the force of gravity. This is undoubtedly true where the operation is performed through the vagina, as in abscess in the cul-de-sac. As a matter of fact, however, if gauze alone is used the wound in the vagina contracts on the gauze, shutting off the drainage. If rubber tubing is used, it is liable to slip out although we use some of the various retention tubes. Here again the combination of gauze and tubing works well. Packing the gauze around the outside of the tube, where the pelvic cavity has been reached through an abdominal incision, I believe we can rely more thoroughly upon the handkerchief drain placed in above than any vaginal drainage.

The wounds of the extremities are readily drained by the use of gauze. The one exception to this would be compound fractures and even in these many surgeons prefer to use gauze, but this necessitates disturbing the limb to change the dressing. If the wound is made as dry as possible and an opening made in the most dependent part through which a bone drain is passed, the original wound can be closed and the limb encased in plaster of Paris and left undisturbed until bony union has taken place. This, of course, provided there is no temperature. In operating for fracture of the patella, openings should be made on either side of the joint just above the condyles of the femur and bone drains passed through into the cavity under the patella. Then the plaster-of-Paris bandage can be applied.

In closing, I would simply add that one of the most important parts of the technique of operative work is good drainage.

TWENTY YEARS AFTER.*

BY O. S. RUNNELS, A. M., M. D.

When Dr. E. H. Pratt told me confidentially in the summer of 1885 that he had discovered the most prolific source of chronic diseases and that he was willing to rest his claim to fame upon that discovery, I was incredulous. At first I thought my good friend had been carried afield by the enthusiasm incident to his supposed discovery and that time would temper his judgment and bring him back to the plane of mental average; that the test of experience would prove that he might be overestimating the value of what seemed to him to be of such great worth, and that sober second thought might lessen the prominence of the tenet for which he was contending.

I was profoundly impressed, however, by the fervor of his utterance and at once became inquisitive and interested; and this interest was much quickened as I recognized that his revelations concerning the etiological significance of the irritations of the sympathetic nervous system tallied with all that was then known upon the subject. I found that his exposition pertaining to the pathology of the orifices of the body not only took note of the knowledge gained before the time of biblical Abraham touching the pathology of the prepuce and also of the discovery of Emmet in 1862 relative to the disease-producing agency of the cicatricial plug in the cervix uteri, but that this knowledge was grouped, extended and systematized.

It was Dr. Pratt's claim that these isolated factors in etiology had relationship not only to each other but to the rectal factor, the urethral factor, the pudendal or clitoris factor, the nasal factor, the throat factor, and to any factor anywhere in the body, but chiefly in the orifices of the body, that could serve as an irritant to the sympathetic nervous system. He claimed that all this information of the specialists was tributary to the general principle that chronic diseases were dependent for causation upon long continued irritation of sympathetic nerve-terminals; and that the realization and utilization of this knowledge was essential to the speedy and permanent cure of these maladies.

* Read before the American Association of Orificial Surgeons, Chicago.

The promulgation of this thought, so radical and sweeping, served to arouse a lethargic profession to protest and active opposition. As usual when new ideas have birth, there were denunciation, ridicule and false report; and the advocates of what had been denominated the orificial philosophy had burdens to bear and martyrdoms to suffer. It was the experience, to a degree, of Jenner and Harvey and Hahnemann over again. The prophets were stoned, but the truth could not be crushed or extinguished. Responsive ears heard the message, even across the barriers, and men of all schools sat side by side at the semi-annual clinic of the Master.

For twenty years the thought has progressed and men of high degree and of low degree have come from near and far and have willingly paid their tuition and assumed the rôle of pupil that they might learn the theory and the technique of the orificial practice. Thus it is that hundreds and thousands of practitioners, representing every shade of therapeutics, have acquired knowledge hitherto obscured that has simplified etiology, diagnosis and treatment, and that has proved to be of the utmost value in the saving of human life.

It is not, however, as the advocate that I appear to-day, but rather as the historian and commentator. I do not come in polemic spirit to plead and defend, but to note the present status of etiological science and to determine as judicially as possible what twenty years of investigation and of experience have done in exploding or establishing the orificial philosophy.

During the time mentioned, the effort of investigators has been expended as never before in ascertaining the causation of sickness. It has been broadly recognized that every illness is the effect of some cause and that the logical way to the cure of the illness, or to the annulment of the effect, is to eradicate the cause; and, going a step further, to do this before the opportunity for the effect has occurred. In the realm of acute morbidity, therefore, the science of prophylaxis, or prevention, has attained great proficiency. The immense amount of knowledge gained concerning pathogenic microbes and mosquitoes, infections, contagions, deleterious food adulterations and the slow toxemias incident to the habitual drinking, chewing, smoking, or hypodermic use of narcotics has made it clear that prevention depends upon strict quarantine, or the separation of

the human body from the thing that can work its devastation. For example, in case of yellow fever, typhoid fever, cholera, small-pox, leprosy, measles, whooping-cough, tobacco-heart, or any paralysis of limb or function due to the senseless habit of the consumption of narcotics, we know that a blunder has been made and that the price of that blunder is being paid. In other words, no disease is here without a cause; without the infraction of natural law; without penalty to a circumstance largely or wholly under human control.

Thus, attention is being paid to the part played by impalpable and imponderable pathogenic agencies—to things hitherto invisible, immeasurable and apparently unworthy of notice, and to the production of proof that nature is responsive to influences beyond and below the old-time conceptions of our materialistic age. I note further that while nature is thus affected by infinitesimal agencies that are deleterious, she is none the less responsive to benign influences, however trivial or much attenuated, that may have opportunity to operate; so that the gross opposition to the potentialities of medicines that have lost their bodies in attenuation has been hushed to quiescence, at least, in the presence of the therapeutic uses of light, heat, electricity, radium and suggestion.

No one is too dense in his comprehension to realize the potency for mischief of even the trivial irritant of a cerebro-spinal or sensitive nerve, such as a hang-nail, a sliver in the flesh, or a mote in the eye, because the first word, almost, of the child's vocabulary is "Ouch, it hurts"; so it has become possible for the one a little more educated to understand that a trivial irritation of a sympathetic or subconscious nerve provoked by an adherent membrane, a pinch of the tissues, the teasing and nagging incident to an eroded sphincter, or what not, is given voice to by nature none the less visibly and audibly.

Coming to the consideration, in this connection, of chronic ailments, we find that the scenery has been changed somewhat, but the stage and the star-actor, I mean the life-force and the arena, are the same in every act. New agencies are found in operation, but the symptoms representative of the chronic ailment are but effects of some long-borne cause. Whatever the nomenclature employed in the definition of the various phases of chronic disease may be, the central fact common

throughout is physical incompetency; is the proof that nature has been unable to defend herself and that, because of exhausted energy, reduced vitality and general impotency, malign influences have been enabled to gain the sway and become predominant.

The great achievement of the orificial philosophy was the concentration of the light-rays upon the etiology of chronic diseases. It was the focusing of the attention of investigators—the diagnostician and the therapist alike—upon the conditions in every individual necessarily precedent to the inauguration of the disease. It was the production of proof in irresistible volume that full-complement of vitality and chronic disease were a contradiction. It was the demonstration that when consumption, or cancer, or Bright's disease, or sclerosed arteries, et id genus omne, has gained foothold and is forcing its victim to the wall, the testimony is already in evidence that the resistance of that individual has been rendered inadequate, his defense has been overcome and the impotency of his life-force to repel the disease is self-evident. It was the iteration and reiteration beyond seventy times seven, till deaf ears were un-stopped and scales fell from the eyes of the blind, that the way to prevent manifestations of chronic ailments and to relieve them or to cure them, when present, was to pay attention to the storage of vitality; was to see to it that life's battery was not grounded and that needless waste of energy was not going on; in other words, that full complement of life-force was maintained.

I say the great merit of the orificial philosophy was the definition of the part played by the irritation of sympathetic nerve terminals in producing the waste of energy or life-force so essential to chronic ailment, and the emphasis it placed upon the detection and eradication of those irritations, both for the prevention and the cure of such morbid expression. It proved to be the great clearing-house of diagnosis and served by exclusion to make plain deep and formidable maladies, secondary, perhaps, to the initial manifestations of morbidity, or that had evolution from local embarrassments within the body itself; such as calculus formation or the defection incident to an appendix vermiformis.

Facts so patent and so easily demonstrated appealed at once

to all who were receptive to the truth; to all who were free from prejudice and were not under the domination of entrenched error; to all who were not willing to magnify the mistakes and the errors of the path-finders and discoverers, the earliest orificial surgeons, and who refused to belittle themselves by retailing stories of incompetent sphincters that were said to exist in adjoining counties. The vindictiveness of the primal opposition gradually lost its venom; the courage necessary for the defense of the orificial precept was less in demand as time passed, and the truth gained predominance as the wonderful results of orificial surgery were observed.

The Journal of Orificial Surgery, for a dozen years needed to disseminate and establish the truth for which it existed, was finally found to be no longer necessary, as medical periodicals everywhere were glad and eager to do its work. Chairs upon Orificial Surgery have been established in every medical college abreast of the times, and the dissemination of the knowledge pertaining to the sympathetic nervous system has become so widespread and general that the present clinic of exposition can permit its Master to enter upon his well-deserved repose.

How great an innovation has been thus wrought in our time, we, ourselves, do not wholly realize. We are too near the event and too much a part of it to be able to sum it up and to give it historic setting. The greatness of Mt. Shasta is better realized when you are hundreds of miles distant on land or sea; Abraham Lincoln is larger to-day than when Booth's missile found him; and so certain historic events gain importance by the lapse of time. We realize it daily, however, to a degree, as the victims of the old ignorance appeal to us for help; as the story of their morbidity is unfolded and we come to know that their lives have been rendered miserable or have been needlessly sacrificed by the non-recognition of some trivial factor, the timely removal of which would have insured good health and longevity. It is exceedingly hard to be patient and tolerant in such a situation, or to refrain from the just characterization of a service that has been conducive only to ill-health and early death.

Within the last year I have seen a woman sixty-two years old with a clitoris buried under an integumentary hood as thick as sole-leather and an abscess containing an ounce of pus and old smegma, the clitoris being the center of the field! The untold agony of that life, the incapacity of it, and the perpetual struggle of it to keep out of an insane asylum was measurable in part by the supreme joy and gladness and quick rebound of the patient to good health when the cold abscess was evacuated and the woman was circumcised. And, the shame of it, all through the years a score or more of physicians had ministered unto her!

Who among you prescribes long for a baby with any expression of malnutrition without seeing to it that orificial irritation is not a factor? Who ever thinks, to-day, of sending anyone with declining health to a far-away climate until every physical burden has been lifted—until the sympathetic nervous system has been made free from all embarrassment? Is it possible that anyone, claiming to be learned in the art of healing and thus abreast of the times,—is it possible for any physician, I say, to complete a diagnosis and to proceed with the treatment of any chronic ailment without disproving the causative agency of some orificial factor; and without making painstaking investigation concerning the etiology and the debilitating influences long operative in every such case?

How superficial knowledge may be and how inadequate professional service may be, when no thought is given to such discovery and no steps are taken to unburden a life-force long in bondage to a disease-producing agency, is familiar example to everyone who knows his lesson. Witness, for example, the fretful, crying, scrawny, poorly nourished, perhaps eczematous baby, defying all remedial agency and progressing steadily from bad to worse; is it merely an adherent prepuce or a clitoral hood that needs freeing? Probably; for every prepuce and hood of clitoris is adherent at birth and requires manual intervention for relief, thus bringing health to the sick baby with rare exception. Witness the pallid, flat-breasted, tearful, excessively nervous girl, with menstrual function late or poorly performed, with periodic headache and fainting at every turn, with physical incompetency the marked feature of every situation. Is manganese or sepia or nux vomica or pulsatilla or ferum, any of them, the primal and persistent remedy? No. Let attention be given to her handicap—clitoris, rectum, infantile uterus. See to it that she has a good start and fair opportunity, and nature and your adjuvants will do the rest. Witness the patient in gradual decline, with progressive emaciation, with hemoglobin impoverished, with persistent cough and bacilli of Koch, and with the fixed idea of an inherited disease, and note the joyous rebound after opportune surgery and the full regainment of good health in countless instances of such experience. Witness the great surgical clnic and the deft operator lopping off branches of a pathological tree but giving no heed whatever to the root of the matter, the long borne causative factor which is left to continue its baleful effects, undetected and unmolested.

Verily, the evolution is incomplete and the dissemination of knowledge must go on. It will be impossible, however, to turn the hands on the dial of progress back and lose the inestimable gain of twenty years.

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THE SPHERE OF HOMEOPATHIC MEDICATION IN
OBSTETRICAL EMERGENCIES.*

BY A. H. RODGERS, M. D.

The contemplation of a few obstetrical experiences has led me to ask the question which should have been the title of this paper, "Within what Limits Do Medicines Act Homeopathically in Obstetrical Emergencies?"

When the time in which to act is short and one or two lives are in danger, we must look at cases from a different standpoint than when prescribing for the morning sickness of pregnancy or choosing a remedy to affect the constitution of the unborn child. Here is a case in point.

Mrs. A., confined at Corning Hospital. Three of her four previous labors had been marked by post-partum hemorrhages. In this, the fifth, she had a severe hemorrhage. The placenta had been delivered entire and a nurse was guarding the uterus when the flooding began. The pulse became almost imperceptible, face ashen, lips and finger nails cyanosed and the patient fainted.

Several things were done promptly as I had plenty of competent assistance. Among them were the kneading of the uterus externally, elevation of foot of bed, the administration of china 3x, as well as of the fluid extract of ergot. Patient recovered consciousness in about five minutes, but ten minutes later she relapsed into unconsciousness and remained so longer than at first. This time no hemorrhage appeared, though the patient's condition seemed more desperate than before. Hot rectal injections of normal salt solution were given twice with good effect.

Two days later a sudden elevation of temperature caused me to order a vaginal douche, which brought away a clot five and one-half inches long by three and one-half inches in diameter. Patient made good recovery. She has since received china for menorrhagia with good result. I mention this case not to belittle the use of homeopathic medication in obstetrical emergencies, but to help to determine, if I am able, what measures cannot be replaced by drugs administered homeopathically or other-

* Read at the semi-annual meeting of the N. Y. State Homeopathic Medical Society.

wise; within what limits we ought to expect the simillimum to act, and finally to what drugs we should turn if the similar remedy is not readily chosen.

Using post-partum hemorrhage as an example, when its possible causes are considered, no one will question the advisability of such measures as the following, nor suggest that our homeopathy is at fault: Lowering of patient's head; elevation of foot of bed; manipulation of the relaxed uterus through the abdominal wall; removal by hand of retained portions of placental tissues or clots; at the same time using bimanual compression of the uterus; emptying an overdistended bladder or rectum; rectal injections of hot saline solution; suturing of a deep cervical laceration. We might go further and mention uterine injections of hot water at a temperature of 115° to 120°; exciting uterine contractions by putting child to the breast, or by the faradic current.

These measures are simple; most of them necessary. We have no right to expect homeopathic medication to take their place.

These things aside, and as well the fact that to make use of them demands a steady nerve and a cool brain, we have, I think, the limits within which we ought to find the simillimum all-sufficient. The indications for bell., ipec., cham., china and so forth should be so firmly impressed on our minds that we may readily choose the best one.

Within these limits we find that prescribing for obstetrical emergencies calls for the exercise of the same faculties that prescribing for any ailment demands, the careful taking of the case and the choice of the similar remedy.

When we make a mistake, we know where the fault lies, i. e., with ourselves; and having that knowledge is half way to correcting it.

But the sphere of homeopathic medication is further limited by the ability of the physician thus to interpret the symptoms and to fit the remedy to the case. The better he knows his *materia medica*, and the more carefully he studies his patient, the less frequently will he turn to the physiological use of ergot. But to ergot he will turn and ought to turn and at that, quickly, if the treatment already adopted prove insufficient.

Am I hereby encouraging a weak-kneed homeopathy? I think not. Success in homeopathic medication is always lim-

ited by the personal equation, and these are cases with which we may not temporize.

In post-partum hemorrhage then, remove all removable causes, select the similar remedy as carefully as is consistent with the circumstances. If the result is satisfactory, well. If not, give a hypodermic injection of thirty minims of the fluid extract of ergot, and repeat if necessary.

I advocate doing this rather than giving ergot at once, because I believe the patient will be better off, if the ergot is not used, and that thereby we learn to be better prescribers and gain confidence in our ability as such.

So far as obstetrics is concerned, I received my education in an allopathic college. The transition to homeopathy in this respect has been gradual. For the past several years, instead of giving the customary prophylactic dose of ergot, in cases where secondary post-partum hemorrhage was found, I have prescribed homeopathically, and, as well, left a two dram vial of ergot, with directions that the ergot be used only in case hemorrhage persists in spite of the homeopathic remedy and manipulation of the uterus. I commend this method of breaking away to any who give ergot as a routine measure.

With one exception it has never been used.

In the only cases of eclampsia I have had to do with the labor had been managed by others. I may not therefore speak with the authority of experience. However, I hold myself in readiness to treat that emergency upon the same general principles: first, to remove, if possible, any cause or exciting factor—for example, by emptying overfull bladder or rectum by catheter and enema; by hastening delivery if it is inevitable, or if the case be a desperate one by bringing on labor by intra-uterine injections of sterilized glycerine; manual dilatation of cervix and delivery by forceps, all under chloroform. I would choose the homeopathic remedy as well as I could, possibly wait for it to act while I kept the patient under the influence of chloroform.

At any rate, if the selected remedy failed to act, I would certainly resort to the temporary use of old-school methods: chloroform, *veratrum viride* θ in sufficient dose to keep pulse at about sixty, perhaps catharsis, and so forth.

I am not endeavoring to lay down any hard and fast line of treatment for obstetrical emergencies, but rather to elucidate the principle of a line of action.

The sphere of usefulness of homeopathic medication is limited on the one side by conditions with which medication has nothing to do and on the other by the personal equation, the ability of the physician to apply the law of similars.

After all, that sphere of usefulness may be a very extensive one if, as disciples of Hahnemann, we patiently try to perfect ourselves in the art of homeopathic prescribing.

FEMALE STERILITY.*

R. DEL MAS, PH. D., M. D.

Oh ! Heaven of bliss ! when the heart o'erflows
 With the rapture a *Mother* only knows !

—HENRY WARE, JR.

Nothing in Nature exists without purpose. To believe the contrary is folly, and failure to obey natural laws will necessarily be followed by evil results.

Nature having provided woman with reproductive organs, the latter must beget that her destiny of procreant be attained and true womanhood be accomplished.

In certain higher circles of life, it is thought that intellect and educational training do overcome and compensate for love's bliss, as though woman was not made out of flesh and bones, and only was a "spiritual" being, whose energy were to be developed in that "strange" sphere where the mind vibrates, but the heart never thrills. And what could be justly said of all the nunneries in the world? Are they not hot-beds where Nature is cheated? And when and where did the "Father of Christianity" ever teach to deviate from natural laws? But it would here be out of place to even slightly allude to monkish teaching, with the hope that the millennium would occur in the next twenty-four hours! Still it matters not whatever creed we nourish and social standing we hold; as reasonable beings, we must admit what experience, reason and science teach us concerning the social destiny of woman. She must, willing or unwilling, contribute her share toward continuing posterity; and there is no sense of degradation she must feel in this matter. A sterile woman disappoints Nature, and is bound to experience a sense of imperfection which daily pares off her tranquillity of mind and well-doing of body. The woman who prevents conception is to be pitied and treated, since she has an aversion or incapacity to perform the sexual act, if she does not fail to realize what Nature and society demand of her. But what shall we say of the "Human-germ-killer"? And whence comes the "mulier-gelder"? The latter is quite fashionable

* Written for the fortieth annual session of the Minnesota State Homeopathic Institute, Minneapolis.

nowadays. He seems to be a "necessary note" in the production of the "discordant hysteric cord." Erroneous is the creed that pretends to elevate the race by subtracting it from its natural obligations; and we painfully admit that such a creed has worked its way from the highest social circles to the peasant's sphere. Do you wonder that "Big-Sticks" commence to speak of race-suicide? But do you really think that their pondered words will ever cause barren women to become fruitful? Statutory laws will never raise the standard of public morals. The luxurious social life of to-day has made our hearts "oblique." To enjoy life well, a poor man, at the present date, has no need of a wife, and still less of children. And social "exigencies" of our day are so tedious, numerous and exacting, that woman should be made of steel that her nerves could resist without injury and "solution of continuity" an eternal pounding and stretching. Would the abolition of Trusts' tyranny make the poor man rich? Kindly do not ask me. But allow me to ask a question: If no poisonous drug could ever be procured by the laity, except on the prescription of a licensed physician, and if no "patent" or "advertised" *regulator of women* were allowed to be sold or advertised, do you not think that the physician would not be called so often to the bedside of goody-goody women (that could lick church steeples to nothing that their souls be saved) that are aborting due to a "cold," a "fall," or "heavy lifting"? Such a law would not raise the morals of anyone; but do we not muzzle or chain up an ugly dog, if we do not want to kill him? And regarding the laws regulating the sale of drugs by pharmacists and "peddlers," I am at a loss to see the American Stripes do not wave so high as the French tricolor. Maybe the *medical regiment* on this side of the Atlantic is responsible for it.

So much on this "side topic." Let us turn another leaf and begin a new chapter.

Is the inability to conceive offspring a disease of itself?

No. It is rather a symptom of a diseased organism. The pathology of sterility is based upon the physiology of conception. Whatever in woman will cause her to be barren must be regarded as a cause of barrenness. Women we have, who cannot conceive; others miscarry or abort; and last, but not

least, some do not become "enceintes" just because "they don't want to"!

In order to be considered as "fertile" a woman must have her sexual organs capable of

1. Producing a healthy ovum,
2. Allowing the ovum to descend into the uterus,
3. Receiving the seminal fluid,
4. Fixing and developing the fecundated ovum.

None of her sexual organs should be wanting. In chronic inflammation of the ovaries, if the ripened ovarian follicles fail to rupture on account of a thickened capsule, sterility will forcibly be present. In hernia, apoplexy, hydrocele and prolapse of the ovaries, we must expect to find sterility. Ovarian and parovarian cysts also prevent generally the production of the ovum. Salpingitis—septic or specific—pelvic cellulitis and general peritonitis do often obliterate and displace the fallopian tubes, and thus give rise to irremediable barrenness. Still tubal pregnancy has occurred in salpingitis. Should the abdominal ostia be occluded entirely, we would have absolute sterility.

Anteflexion of the uterus is congenital or due to an imperfect development during childhood. It is usually met with in a poorly developed state of the sexual organs, hence sterility is quite frequent with this condition, as the produced ovum is unhealthy, the semen cannot enter the womb, or the uterus suffers from a chronic inflammation.

Retroflexion, on the contrary, is a disease of the parous woman, and may cause sterility through a passive congestion of the womb. Hence endometritis and posterior displacements go hand in hand. Retroversions may be followed by prolapsed ovaries, and cause sterility also. Chronic corporeal endometritis, be it interstitial, glandular or fungous in character, usually renders the woman sterile or liable to abort. The chronic discharge escaping from the external os destroys the spermatozoa, and the diseased endometrium favors not the fixation of the impregnated ovum upon the uterine wall. I have never found either a case of membranous dysmenorrhea becoming "enceinte" while her uterine condition lasted.

The prolonged and irregular menstruations accompanying certain female diseases, may also wash the ovum away and prevent conception. A lacerated cervix, usually met with a

profuse, acrid leucorrhea, or the displacement of the os externum, may also cause sterility. Tumors in the uterine cavity will interfere with the implantation of the ovum or its subsequent development; and others in the vagina and of the labia may forbid coition. The copulative act could not take place either, should the vagina be wanting, not duly developed or imperforate. Vaginismus is a frequent source of barrenness; and so are a small os intimum, or internum, and atresia of the cervix.

This is a long array of "rebellious citizens." We might enlist them in two regiments, i. e.:

1. Congenital infirmities,
2. Acquired incapacities.

Of the congenital deformities in the sexual organs of woman, very little might be said as to their causes, excepting "heredity," which is a factor more potent than we generally happen to think of, and by "heredity" I do not mean to say that a "sterile" woman will give birth to a "sterile" daughter. No; but congenital resemblances—normal or pathological—are too frequently seen to be disputed by the unprejudiced mind. Thus, what might be regarded as a congenital deformity in the mother might present itself in a greater degree in the daughter, and again, we have what is called "atavism" or "reversion of characters." That which never appears in the parent may be transmitted through him from grandparent to child; as Darwin says: "In every female, all the secondary male characters; and in every male, all the secondary female characters apparently exist in a 'latent' state, ready to be evolved under certain conditions." Do we not find male traits in females whose ovaries are diseased or after the menopause, and female characteristics in eunuchs? In fact, any "latent" character may reappear after many a generation. Still it is doubtful that a pathological trait be inherited by the child, if it is not present in the germ-cells of the parent. "Heredity" is then a factor that acts from within. It is a "potentized" or "dynamical" agent, present within the cell at its birth and subsequent development, and causing it to deviate from its natural channel of useful and intelligent destiny. Do you not think that our "dynamical armada" could meet such an enemy as "heredity" is, and sink "him" at the bottom of the sea? I

know we could level and straighten some hilly and crooked roads. I believe the "latent" characters could be successfully assailed and swept away; and what is "congenital" in the mother might in a great or lesser degree—if not entirely—be corrected so that the offspring would not inherit it.

Regarding the causes of "acquired sexual incapacities," their name is "legion," or rather the word "environment" would cover them all. Environment is a factor that acts from without the living cell. It has many heads and tails; it comprises all the agents, be they material, physical, or psychical that exert their action upon the living organism, i. e., food, water, air, the forces of nature (climate, temperature, weather, localities, altitudes), injuries, long lasting diseases, sepsis, venereal infection, improper clothing, an irregular mode of life, neglect during menstruation, sexual excesses, masturbation, applied Malthusianism, mental shocks, grief, privations and hardships of any sort, continence, a life of intemperance of any kind, and injudicious medical and surgical treatments.

One and many of these causes will arrest or prevent in early life the natural development of the female sexual organs, and render them later incapable of bearing offspring. Many a woman has become barren after her first child or miscarriage, and others after acquiring a personal aversion to coition and their husbands and family. Subinvolution due to injuries received during parturition or following labor in "relaxed" constitutions is recognized as one of the greatest causes of subsequent female sterility. But most disastrous to productivity in woman are septic diseases and venereal infection. The wearing of any clothing which to a greater or lesser degree interferes with abdominal breathing, crowding down the pelvic organs, will give rise to various sorts of uterine and ovarian displacements, and thus be a source of sterility. But the ways and means employed to-day to prevent conception or destroy the living ovum in the uterus are numerous in kind and disastrous in results. Applied Malthusianism shakes the foundations of female structure. It is the best and quickest way to remove the female outlines, to make the woman bosomless, hysterical, nervous, irritable, jealous, whimsical, and subject to all sorts of pains and changes in her genital sphere, and spinal and gastric domains. And one needs not be a "religious observer" to believe that. It only requires some observation and a little experience. Are there many women on earth who

know that much? But what is the use of their knowing it, those of them that prefer death to child-bearing? "Teach the child, and he will learn; let mothers set the example." That is very good indeed; still I must confess that the large families, that the mothers around my way have borne, are no incitement in their married daughters to do the same. We, now-a-days, want comfort and luxury; and all means seem to be good to reach that end. The problem to be solved greatly concerns political economy and social morals. And experience and history teach us that the most moral people always was the most temperate, frugal and simple-hearted! . . . But let "Big-Sticks" concern themselves with that branch of government. We will turn another leaf and see if we, as physicians, can do something to check the disastrous march of the furious torrent of race suicide.

Yes, I believe we can to a great extent. Our *materia medica* is a mine richer than all the heads put together of the economists and materialists in the world. We can balance the human mind. What statesman could do it? We are ready to meet "heredity" on a strong footing; and we remedy the changes caused by environment. We can re-establish order in the innermost of man. What statutory laws can do it? It goes without saying that the younger in life is the patient, the quicker and the better the results.

Treatment of Sterility.

Any sexual organ wanting cannot be replaced. Congenital deformities can be corrected. Hygiene and surroundings can be looked after with satisfaction. The race can be ameliorated. The irregular mode of life and improper clothing during the stage of development, as well as neglect during menstruation, can be properly attended to. In her education and training the girl can be looked after, that her procreative power be not smothered. It is well to bear in mind that woman and man are not quite alike physically, nor do they develop alike either. At puberty the female scale will tip to the head or the pelvis, and give us a healthy woman or a physical wreck. It seems to be almost a truism that the whole life (health) of woman centers upon her reproductive apparatus. Hence the education given our girls must vary from that given our boys. The girl who will race with the boy after intellectual attainments may be as successful as he, but her brain will sap her pelvis, and, while the boy remains physically sound, she will be left with disordered pelvic functions. The educational heads of our country might study this question, and furnish a "mémoire" for the enlightenment of our Federal and state authorities. If it were possible also to bring woman back to her sense of duty as procreant, and make her believe practically that motherhood

is her highest and noblest vocation, the Republic would see her Giant Eagle shake her wings with delight.

There are certain "congenital deformities" that operative procedure must remove; and I will not discuss the matter, but leave it to the mind and conscience of the surgeon. Atresometria, vaginatresia and an imperforate hymen necessarily require "mechanical" treatment. But "membranous" dysmenorrhea, and a small os—internal, or external—can be cured by medicines. Backwardness or dwarfishness can be greatly benefited—if not entirely—when we treat the "constitution" and not the "organ" of the patient. Inherited and acquired sexual defects can be tackled, and, once the "constitutional" taint removed, Nature will do the rest; that is, "growth" will necessarily follow after cure.

Surgery has never "cured" a constitutional ailment. It may remove the "results" of diseases, not diseases. A lacerated cervix, a torn perineum may cause future trouble, and should be repaired. But where does common sense come in, when surgical hands pretend to be a panacea for all displacements, enlargements, prolapses, catarrhal inflammations, and discharges of the uterus; and salpingitis, and oöphoritis, and what not? Here is a uterus that, through a "lack of tone," one day fell to one side or another, backward or forward, or slid down to near the mouth of the vagina, and started to make her owner feel that "he" was there, and not at the "right" place. "He" had turned to be a "kicker," and pretty good at that, like a bronco on the wild prairie. Now, do you think that a pessary, a shortening of ligaments, a ventro-fixation, or an hysterectomy will bring "tone" in that patient? No. The "bronco" will be "tied" or "gone," but the "patient"? . . . And, if the patient is cured by an adequate constitutional treatment, what will take place? Well, the uterus having regained its normal weight and the ligaments their wonted tenseness, the displacement, enlargement and accompanying inflammation and leucorrhea will vanish from sight. Any of us can verify the assertion.

Septic and venereal infection are also amenable to the action of medicines. Vaginismus, generally found in nervous patients, is not a local trouble, and requires a systemic treatment. The nymphomaniac and masturbator need no castration; and their infirmity is no "sin," but perverted nervous activity instead. And a well selected remedy will do more for them than all the sermons preached from now until the millennium, the benefit to be derived from a good sermon notwithstanding.

Do you suppose that good advice will cure the married woman who, through some source or another, regards sexual intercourse as a "degrading act," or has no enjoyment and perhaps feels pains during coition? No. But the "homeopathic" remedy to the "case" will, and quickly too.

The pains and aches a woman has often to go through during coition and child-bearing are sufficient to lead her to continence and applied Malthusianism. And the "block" ought to be removed from her way with medicines.

Gouty, rheumatic, anemic subjects, and those having the "tubercular" dyscrasia are very prone to pelvic derangements. The "taint" once obliterated, the pelvis will give no trouble.

Ovaritis is frequently seen in uric acid constitutions; it may also develop from unnatural gratification of the sexual desire, after sexual excesses and hemorrhages, from a long period of continence, from septic and gonorrheal sources, and from subinvolution and prolapsed ovaries.

Oöphoritis simplex is rare, as it most commonly appears with endometritis and salpingitis; but menorrhagia seems to occur chiefly with "cystic oöphoritis." The reflex neuroses concomitant with inflammation of the ovaries are varied and numerous; and only the "totality" of the symptoms in each case should guide the prescriber.

Organotherapy is misleading; but a prescription based on "generals" will never fail to bring favorable results gently and quickly.

Operating, in many cases, would seem to be advisable, should we consider "how quick" the surgeon can work, and "how slow" a potency will oftentimes act. But we can point out facts to our patients that will make them shrink from the operating table. Surgery, as above stated, has never "cured" a "constitutional" disease, but it has been disastrous many a time to the general health of the patient in causing internal changes far worse than the external manifestations of diseases.

Some women will conceive and bear their offsprings only to a certain stage of uterine life. And here it is where the conscientious prescriber will obtain favorable results, and see smile both a triumphant mother and a healthy child.

Yes, grand is the calling of woman on earth; and blessed be her who lives up to it. Blessed be the physician who never contributes his share toward race-suicide. Blessed be the man who discovered the "law of cure." Happy is the close follower.

The position I have taken in this paper is open to criticism. We do not all think along the same lines, and I have merely told you some of the things I know about "Female Sterility." I do not deem it proper here—time forbids me—to materialize my opinion and experience in the matter. Suffice it to say that I have seen the "homeopathic" remedy do wonders, and I wish the unbeliever would forgive my frankness, and go and try to put the thing to the test and publish its failures, remembering that only by investigation truth shall be born. And are we not the sons of *Truth*?

THE AFTER HISTORY OF HYSTERECTOMIES FOR
UTERINE FIBROIDS.

BY EDWIN A. NEATBY, M. D.

A short time ago, when talking with a colleague as to the treatment of uterine fibroids by operation, the question was asked, "What is the subsequent history of hysterectomy patients?" Although able from memory to give an answer as to the experience of these patients, it occurred to me that it would be a satisfaction to myself, and possibly of interest to others, if I could trace some of my old cases. The result of this attempt is given in the following pages.

For the purpose in hand it is not enough to know that the vast majority of cases of retro-peritoneal hysterectomy make an "uneventful recovery." That this is, at the present day, the usual event is happily an established and generally known fact. The object of the present enquiry is rather to provide some fresh data wherewith to answer the question whether or not the after-results of the operation are satisfactory to the patient and to the surgeon.

Some attempt will therefore be made to compare the patient's condition before and after the operation, and to give where possible the patient's own view as to the ultimate success of the treatment she had undergone.

Case 1.—This patient was, I believe, the first retro-peritoneal hysterectomy performed at the hospital. It was done in 1896, the patient being then 50 years. The operation was carried out for pain in the abdomen and legs, urinary difficulties, and loss of flesh and strength. The tumor extended well above the umbilicus, and was stationary; the menopause had occurred five years previously, and had not been followed by any diminution of the tumor. The patient was discharged exactly a month after the operation. She was seen a few weeks ago, and has been in another hospital for ulcer of the stomach and accompanying peritonitis, for which celiotomy was performed. She is still ill-nourished, but this is chiefly due to a chronic starvation owing to extreme poverty. She has lost the original pain and the urinary difficulties, is less emaciated, and is satisfied that the operation has been of great benefit to her. In this opinion I concur.

Case 2.—Sent to me by Dr. Ord; operated upon in 1897, when the patient was forty-three. At that time she was suffering from menorrhagia and dyspnea due to anemia. A large

soft mono-myoma was found. It was removed; and the patient left the hospital well a month later. Her convalescence was extended by thrombosis of the left femoral vein. In reply to my inquiry, Dr. Ord kindly writes as follows: "I have seen K. F.; she has had good health since the operation. She had 'white leg,' you will remember, in the L. H. H., and has had pain and weakness in it since, and a small varicose ulcer some eighteen months ago. Except for the usual 'heats and flushes,' this is all. A most successful case, seeing she could not have lived many months as she was before operation, or without it."

Case 3.—H. H., æt. forty-two. In January, 1898, admitted for dysmenorrhea, menorrhagia (as much as forty diapers during a period), metrorrhagia, leucorrhœa, white or brown and offensive, "dreadful aching" in hypogastrium and legs. A large fibroma, presenting at the cervix, and beginning to slough, was removed by *écraseur*.

In September of the same year hysterectomy was performed. Twenty-eight days after operation she was discharged well.

I have repeatedly seen this patient since, and she had lost all her old symptoms, and had been in very good health.

My inquiry as to her present condition elicited no reply.

Case 4.—E. W., æt. forty-six; single; April, 1898; hysterectomy was performed for an enlarging myoma, associated with irregular hemorrhage. Patient was discharged twenty-eight days after operation.

She had no symptoms before operation, except the hemorrhages and a rapid pulse—100. The pulse quietened down, and the patient remained in good health.

On November 6 she writes that she "is fairly well on the whole, though not strong, and still troubled with flushes of heat, and nerves in very shattered condition."

Case 5.—O. M., æt. forty years. This patient came to me in 1898. She was then suffering from menorrhagia and severe pain, chiefly in the right ovarian region, during the periods. The leucorrhœa was thick, and yellow in color, and had also increased considerably during the last six months.

On examination, a myoma was found, extending to about half-inch from the umbilicus, and involving chiefly the anterior wall of the body of the uterus. Retro-peritoneal hysterectomy was performed on June 4. She made an excellent recovery, and was discharged on July 14.

She remained well, and continued to gain strength; and was able to work hard afterwards. Some time ago I heard that she was well, and had lost her anemia. On November 4 she wrote as follows: "I am happy to write to you, I am and have been in *good health* these last four years. With the exception of a monthly headache, I have no pain or inconvenience from the operation."

Case 6.—Hannah, æt. forty-two; married; operation, October, 1898. Condition before operation: Menorrhagia, offensive leucorrhœa, dysmenorrhœa, abdominal tumor extending two inches above umbilicus. Heart sounds weak. Discharged thirty days after operation.

Not seen for three or four years, but up to that date remained very well, and able to conduct a flourishing green grocery business.

In reply to my inquiry, I received the letter back through the returned letter office.

Case 7.—C. S., æt. fifty-nine; hysterectomy for fibroids of uterus, performed December, 1898, on account of post-menopausal hemorrhage—profuse, but not offensive.

The myomatous uterus was found to have undergone malignant changes. She made a good recovery, and for two or three years reported herself at intervals as quite well.

On November 3 I learn that she "has enjoyed excellent health since the operation," and is in a situation.

Case 8.—No. 609; K. D., æt. forty-four years; was admitted suffering from a large abdominal tumor.

On July 11, 1904, operation was performed, and a large fibroid tumor was removed. There is no record as to the removal of ovaries.

Patient made good recovery, and was discharged on July 29.

I have seen this patient quite recently, and she reports herself in excellent health. She also wrote on November 3, "I have enjoyed fairly good health since the operation, with the exception of a pain and stiffness in shoulder, as like rheumatism as anything."

Case 9.—T., æt. forty-two; an irregular, nodular growth, reaching to the level of the umbilicus, and resting on the pelvic floor. It was said to be growing rapidly, and at the operation an embryo of about one month's growth was found in the uterine cavity. Pruritus vulvæ and the weight of the growth, which produced very frequent micturition, were the only symptoms complained of.

Six months after, she was seen and had remained quite well and able to conduct her business.

I learn from Dr. Epps, who kindly sent the case to me, that she has remained in good health, and is able to conduct a business.

In answer to a letter of inquiry, she wrote on November 6, "I am very thankful to tell you that I am quite well, and able to work as hard or harder than ever, for the strain of business life certainly does not decrease."

Case 10.—No. 265, A. T., æt. forty-four years. On admission was suffering from urinary trouble, palpitation, headache, and frequent and irregular periods, and edema of both lower extremities.

On examination, a large rounded swelling was felt, in mid-line extending from pubes to 1 1-2 inches above umbilicus and 3 inches on either side of mid-line; tumor connected with uterus.

On March 7, 1903, I performed a double oöphorectomy and hysterectomy, amputating the uterus supra-vaginally.

Patient made a splendid recovery, and was discharged on March 28.

On November 7 she writes, "I am stronger, have more energy, and my head is better, but the flushes are as frequent as they were just after the operation. The discharge is quite as bad. I cannot walk or stand much without being very uncomfortable." On November 17 she states she is better as regards the following points: 1. Hemorrhage; 2. Palpation; 3. Taking cold; 4. Weight; 5. Temper; 6. Sleep; 7. General enjoyment of life.

She is troubled with discharge—intermittent, sanious, acrid (found to be due to a cervical polypus), and with "bearing down."

Case 11.—No. 369; E. L., æt. thirty-two years; was admitted for abdominal tumor, which, owing to its large size, caused difficulty in getting about, pain in back, and dyspnea.

On April 18, 1903, abdomen was opened in mid-line, and tumor brought to view. Right ovary was found high up to right of umbilicus. It was removed intact with the tumor supra-vaginally. The left ovary was not removed.

Patient made an uninterrupted recovery, and was discharged on May 12.

On inquiry on November 7 she wrote, "I am happy to be able to say that I feel much better in health this year than last, with the exception of repeated attacks of bad headache."

Case 12.—No. 701; M. G., æt. thirty-six years (single); was admitted for menorrhagia and weakness, and for an unsightly abdominal tumor, also cramps in the legs.

On August 10, 1901, an incision was made in mid-abdominal line. A large fibroid tumor and uterus were removed.

Patient made a very satisfactory recovery, and was discharged on September 3.

On November 7 she writes, "I am very pleased to tell you that I am in the very best of health, and never was so well."

Case 13.—No. 191; L. B., æt. thirty-nine years; admitted on account of abdominal tumor. For eighteen months had had menorrhagia. She was anemic, and suffered a good deal from headaches; worse during the periods.

On examination, a softish, elastic tumor was felt, reaching to the umbilicus; vagina very small; the cervix pointed back, and was quite continuous with the tumor.

On February 4, 1899, the uterus, tumor, left ovary, and tube

were removed through an abdominal incision by the retro-peritoneal method.

The patient made an excellent and straightforward recovery, and was discharged on March 7.

She was a hospital nurse, and was soon able to return to her duties.

I wrote for information as to her present condition, and received no reply, the letter being returned.

Case 14.—No. 1089; E. G., æt. forty years; admitted for menorrhagia, pain, and loss of flesh.

On examination a hard, inelastic, rounded tumor, rising up out of the pelvis was found, median in position, and extending 5 1-4 inches above the pubes. It was freely movable from side to side. On January 16, 1902, a median incision was made below umbilicus, and the tumor, uterus, and left ovary were removed.

Patient made a good recovery, and was discharged on February 7.

She wrote on November 6, "I have been very well in health since the operation. . . . Lately I am not feeling so well again in myself; I suffer very much at times with pain in the back, which makes me feel very poorly." She came to see me on November 8, and I found she has had hemorrhagic discharge on several occasions since the operation, and complains of disturbed eyesight, pain in the head, and flushes of heat. The scar and stump were sound.

Case 15.—No. 412; E. B., æt. forty-eight years. Three months previously this patient noticed lump in lower part of abdomen, more especially on the right side; she felt pain in it at times. For the last two months the period had recurred every three weeks. The tumor had grown perceptibly since it was first observed. On May 3, 1902, a median abdominal incision was made, and uterus with myoma, right ovary, and tube were removed.

Patient made a very satisfactory recovery, and was discharged on May 29. She continued to report herself for about two years at the out-patient department, and reported some flushings, etc. No reply was received to my recent letter.

Case 16.—No. 441; E. B., æt. thirty-eight years. This patient was sent to me by Dr. Wilkinson. She complained of severe pain in left side of abdomen during the periods, has also lately had a good deal of pain in lower part of back between the periods.

The uterus was much enlarged, and lying to the left of the middle line. A tumor mass filled up the sacral hollow.

On May 6, 1899, the uterus and right ovary were removed by the retro-peritoneal method. Patient made a good recovery, and was discharged on May 31.

I have since heard from Dr. Wilkinson that she remained well; and on October 10 she herself wrote that her health is good, and that she had just been nursing an ovariectomy case, and was on duty twenty-two hours continuously without feeling any inconvenience. Since the operation she had had typhoid fever.

Case 17.—No. 595; S. S., æt. forty-four years. Patient was admitted for profuse and frequent periods. The uterus was found to be large, the cavity measuring four inches. On July 1, 1899, the uterus and both ovaries were removed by the retro-peritoneal method. She made a good recovery, and was discharged on August 1.

This patient has been more or less under observation ever since. She has earned her livelihood as a needlewoman, and in this capacity works for the hospital. She has remained in good health. On November 8 she reported, and complained only of "rheumatism in hands and throat," which has come on recently. She has had no pain or periods.

There was some flushing, which has stopped. She has not felt so well since.

Case 18.—K., operated on in January, 1901. Condition before operation: bedridden from hemorrhage and abdominal pain; extremely emaciated.

Hysterectomy for multiple myomata.

Dr. Frank Shaw reports that this patient has never attained a high degree of robustness, but is leading a fairly active and responsible life.

On November 7, she writes, "I am heartily glad and thankful that the operation was performed. . . . I am really able thoroughly to enjoy life." She adds that she is not a good walker, "on account of her feet," and that she has agonizing attacks of pain in her heart. Of the nature of this I am unaware: the heart was not diseased at the time of operation.

Case 19.—E. F., sent by Dr. Green, was extremely anemic—skin of deathly pallor, and lips blanched. The right heart was markedly dilated, and the arterial tension extremely low. Patient was so breathless as to be quite incapacitated from following her work as domestic servant. The tumor reached to the umbilicus; it was removed in December, 1902. She has been seen several times since leaving hospital, and Dr. Green reports that she is now doing her work, and is keeping well. When last I saw her she looked so well as to be almost unrecognizable.

Case 20.—M. W., æt. forty-four. Sent to me on October 12, 1898, by Dr. Bennett. Suffering from uterine hemorrhage, occurring continually for six months. For two and a half years the menstrual loss had been profuse and premature, and latterly it had been accompanied by a good deal of aching in

lower part of abdomen. A large tumor was found, extending to half an inch from umbilicus, hard and multi-nodular, with one boss very prominent in right iliac region. The tumor was continuous with the uterus.

Retro-peritoneal hysterectomy was performed on October 18, 1898. The patient made an unevenful recovery. A few days ago I heard from Dr. Bennett that she has remained perfectly well, and never once "looked back" since operation seven years ago.

Case 21.—Miss P., æt. forty-one years; was sent to me from Eastbourne, by Dr. Croucher. Her chief trouble was urinary.

On examination a hard mass was felt in lower part of abdomen, extending to within three and a half inches of umbilicus. Cervix was down, forward, and strongly to left, within one and a half inches of vaginal orifice. Tumor and cervix uteri continuous one with another.

On February 29, 1899, I removed the tumor and uterus. Patient made a good recovery, and has remained well.

Dr. Croucher writes (November 6, 1905), "I have just seen A. P., and she says she has been perfectly well ever since."

Case 22.—No. 623; J. B., æt. thirty-four years. Admitted for excessive menstruation, and aching pain in right side. Operation was performed on September 8, 1904, and uterus, which was myomatous, was removed. The notes do not state whether the ovaries were removed or not. Patient made a good recovery, except that she had thrombosis of left saphena vein during convalescence.

I saw her a few days ago, and she was in very good health, and able to do her household duties.

On November 3 she wrote, saying, "Since my operation in September, 1904, I am pleased to say I have felt very well indeed, in fact, my general health is better than it has been for some years. The only inconvenience I have arises from my leg." She now does all her house-work, and before operation she did scarcely anything.

Case 23.—No. 407; C. G., æt. forty-two years; admitted for abdominal tumor, which was first noticed eighteen months ago. On May 2, 1903, abdomen was opened by long incision in mid-line, and large tumor was brought to view.

Both ovaries were diseased, and were removed with tumor and uterus. Patient made a perfectly satisfactory recovery; and was discharged on May 26.

Ten weeks after the operation she took a responsible situation, and I have not heard of her lately.

Case 24.—No. 109; A. L., æt. thirty-eight years, admitted for menorrhagia and abdominal tumor.

On January 16, 1904, abdomen was opened, and the fibroid uterus was removed, and double oöphorectomy was performed.

Patient made a satisfactory recovery, and was discharged on February 9. Eight weeks after leaving hospital she had thrombosis of left saphena vein. She wrote a few days ago saying, "I am very pleased to say I am feeling very well indeed, and am thankful that I am able to be at work again. There is a hard lump in center of stomach when I rise in the morning, but when I lie on my back I can't feel anything of it. . . . The treatment has been the means of restoring me to health and work."

I saw this patient on November 8. She has a small hernia of the abdominal scar, no induration round the stump. There is chronic semi-solid edema of the left leg, with erythema of the skin, she says the left leg was swollen before the operation. She has no flushes now. They were never very bad; sleeps well. Total amenorrhea since operation. No change in sexual feelings.

Case 25.—M. S., æt. thirty-five; married; had had offensive leucorrhea and menorrhagia for eight years prior to admission, in July, 1903. She was wearing a Hodge pessary, which had become almost embedded in the tissues, and causing thickening and induration, suggesting carcinoma of vagina.

An abdominal tumor extending above umbilicus was found. This was removed in the usual way, together with a distended fallopian tube, the size of a large sausage. One ovary was left.

Her own report, dated November 3, is, "I am more than thankful to say I never felt better in my life, in fact, I feel quite a different woman. I feel able to work now better than ever I did. The belt I had on leaving the hospital is worn out about three months, and I feel no effect of leaving it off."

Case 26.—No. 238; C. R., æt. fifty-six years; was sent to me by Dr. Wilkinson, of Windsor.

She was suffering from hemorrhage, leucorrhea, and pain in lower part of abdomen. On examination, uterus was found to be very large, irregularly nodular, and retroflexed.

On March 10, 1904, abdomen was opened, and total removal performed of uterus and ovaries. Patient made a good recovery, and was discharged on April 5.

I heard from her on November 11. She says she is very well, and has no pain or suffering of any kind. She is able to do a considerable amount of teaching work, which involves both walking and prolonged standing. Her sleep is short, and not very sound, but she nevertheless awakes refreshed, and does not feel tired till bedtime.

Case 27.—No. 536; R. A., æt. forty-four years; admitted for swelling in right side of abdomen, also swelling and pain in left leg.

On June 18, 1904, abdomen was opened. Both ovaries were

found to be fibroid and enlarged, especially the left, which was removed with tumor and uterus supra-vaginally. The tumor was very large.

Patient made an excellent recovery, and was discharged on July 11.

Patient writes (November 4), "I am feeling very well in my general health; my side troubles me at times."

Case 28.—No. 943; M. D., æt. forty-six years; admitted for uterine myoma increasing in size, for increasing hemorrhage, frequency of micturition, and offensive leucorrhea.

On December 10, 1904, supra-vaginal hysterectomy was performed. No statement as to ovaries.

Patient made a satisfactory recovery, and left the hospital on January 11, 1905.

On November 6 she was seen and examined. Her own statement is to the effect that she "feels better in general health, infinitely better than for years." She still feels weak, and a feeling as if sacral region "did not belong to her." She complains of pains down arms to fingers and hands; "it takes all strength away"—this was present before operation. Weight on chest—also before operation.

Examination.—Scar wound. No induration felt per vaginam.

Case 29.—No. 785; C. H., æt. forty-five; admitted for myoma, and had suffered considerably from abdominal pain and urinary trouble. Before each period the catheter is required for two or three days, on account of retention due to the pressure of the engorged tumor on the neck of bladder.

Abdominal hysterectomy was performed on October 15, 1904. The tumor consisted of a large myoma, with six smaller ones growing from it. No statement as to ovaries.

Patient made a rapid recovery, and left the hospital on November 8.

On November 4, 1905, patient reports, "Since my operation I feel a different woman, and at the present time I am in a better state of health than I had been in for many years. I can take my food, and it does not cause me any pain, and I have no trouble with the water."

Case 30.—L. S.; æt. forty-six; seen December, 1904, with Dr. Stonham.

Complaints.—Metrorrhagia, dysmenia (like labor pains), and attacks of pain, tenderness and temperature, diagnosed as localized peritonitis. Examination revealed fibroid uterus and a soft cystic swelling on left side.

At operation both ovaries, tubes, and uterus removed.

Report, November 6, "is very well, feels quite different, is putting on weight; has no bad symptoms; only a few flushes in the evenings."

Case 31.—E. H., æt. fifty-two; still menstruating; quantity profuse, lasting seven days; complains also of abdominal pain.

At operation, August 24, 1901, both ovaries were left, followed by thrombosis of left saphena vein.

Report of November 3, 1905, "Is decidedly better; has the use of her limbs now; only at times suffers from internal pains." She does her work with more comfort than before the operation, and does more of it.

Case 32.—No. 1084; E. P., æt. forty-nine years; was suffering from constant "shooting" pain in left iliac region, accompanied by irregular and profuse and prolonged periods, for which she has been repeatedly and vainly curetted. This condition had continued since August, 1899.

On December 15, 1900, abdomen was opened, and two small fibromata, about size of a walnut, were seen embedded in uterine walls. These, with uterus, were removed by the retroperitoneal method. Both ovaries were left.

Patient made a good recovery, and was discharged on January 14, 1901.

On November 6, 1905, reports herself, "very well since operation."

Case 33.—Kate H., æt. thirty-eight; in April, 1904, came for a lump in abdomen, reaching nearly to umbilicus, associated with menstrual and intermenstrual pain, distention of abdomen, dyspareunia, and aversion to coitus.

Hysterectomy was performed in March, 1905, and one ovary was removed; good recovery.

On November 5, 1905, she was seen again, and was found to be getting stout, and (for this reason) somewhat short of breath. She had lost all abdominal pain, had no dyspareunia, or impairment of sexual feelings, and was doing her daily work. The abdominal scar was good and firm, and there was no induration around the cervical stump. She did not refer to any menopausal symptoms.

Case 34.—J. B., æt. forty; single; came on account of abdominal tumor, increasing in size, associated with rapid pulse (110 to 120), general weakness and breathlessness. On account of increasing cardiac weakness, hysterectomy was performed in January, 1903; one ovary was removed.

Patient was slow in regaining strength. She has not suffered since the operation with flushes, but the heart has been slow in recovering itself. Pulse is still rapid, though less so than before; she cannot stand well on account of downward pressure in the vagina. She has also very slight periodical hemorrhages.

Case 35.—Laura G., æt. thirty-one; single; sent by Dr. Frank Shaw, in January, 1904, with uniform, globular, uterine myoma, of very limited mobility. She had considerable menorrhagia.

gia, with some intermenstrual hemorrhage, abdominal pain, retching after exertion, and shortness of breath.

Hysterectomy was performed shortly after the above date.

On November 8, 1905, Dr. Shaw reports: "I saw this patient a few weeks ago, and she was quite well and strong."

Case 36.—Miss K., æt. thirty-nine; in July, 1903, sent to me by Dr. Ray; complained of pain in right iliac region, abdominal distention, and frequent micturition, or partial retention, by turns. Five years previously, had had a Whitehead operation for prolapsus recti. Menstruation, painful and scanty. Patient was thin, pale, ill-nourished, and highly nervous. She had enlarged glands of the neck, threatening to suppurate. On examination, a fibroid uterus about the size of a clenched fist was found, together with a large and tender right ovary. Medicinal treatment, continued for some eight months, was followed by very little relief to the abdominal pain and general ill-health.

In March, 1904, hysterectomy and right oöphorectomy were performed. Patient made a good recovery, and has been able subsequently to travel nearly round the world with comfort. She is in every way greatly improved.

Case 37.—Mary C. F., æt. thirty-seven; single; sent up by Dr. Frank Shaw, with large irregular multi-nodular myoma, some of the nodules being suspiciously soft. The lower pole of the tumor was almost impacted in the pelvis. Abdominal and dorsal pain, and frequency of micturition at night, were her chief discomforts.

In May, 1901, hysterectomy was performed at the Buchanan Hospital, St. Leonard's; some suppuration occurring in the incision.

On November 15, 1905, patient writes: "I feel sure you will be pleased to hear I am very well. It is really quite a pleasure to feel so much stronger, and better able to face the duties of life."

This patient's complete recovery was retarded by the working out of some sutures.

Case 38.—M. B., æt. fifty-eight; in January, 1898, had a large myoma reaching well above the umbilicus. She had been aware of its existence since 1881. In 1873 an ovarian tumor was removed by the late Sir Spencer Wells, and in 1882 the other ovary was removed for the fibroid, on account of its size, but not because of hemorrhage. This operation produced a slight diminution in the size of the tumor.

Hysterectomy in August, 1898, on account of the bulk of the tumor, which was edematous and semi-cystic.

I have not heard for two or three years of this patient, but up to that time the reports were uniformly good.

Case 39.—S., æt. forty; in 1895; married; sent to me for

palpitation, anemia, dyspnea, menorrhagia, abdominal tumor (uterine myoma) extending to three fingers' breadths from umbilicus.

In June, 1896, double oöphorectomy was performed, and followed by very marked temporary diminution of tumor. Rapid enlargement of tumor followed, accompanied by progressive cardiac weakness, with dilatation of both sides, and aortic systolic bruit.

In August, 1901, on account of recurrent hemorrhages and growth of tumor, hysterectomy was performed, and a remarkably easy recovery took place.

A month later, Dr. Moir reported: "Apex beat in anterior axillary line, well defined; sounds at apex sharp and closed, nearly equal in time, nothing abnormal in aortic area; soft pulmonary systolic bruit. P. 90, slight tension shown by sphygmograph."

Nine months after the operation patient died suddenly from cardiac failure.

Case 40.—B., æt. forty; in 1893. Abdomen was opened elsewhere in 1893 for "soft multiple myoma," which could not be removed; came to me in July, 1893, on account of increasing size of tumor; free fluid in abdomen, swelling of feet, and dyspnea. The tumor was removed in May, 1895. A small portion was left adherent to some tissues near right kidney; recovery was good.

Afterwards extended growth took place, apparently from above portion. She had a somewhat up-and-down course, the growths increasing considerably for a time, and the periods recurring with more or less regularity.

Last seen on November 2, 1905; many nodules in abdomen, but in every way improving; able to do much more work than before operation. She expressed herself as thoroughly satisfied that the second operation had been done.

Such then are the materials upon which my answer to the question propounded in the opening sentences of this paper must be based.

They have, I must confess, worked out somewhat differently from what I expected and hoped. It was my wish to collate *facts* bearing upon one or two important questions, and to supply some small amount of positive and relative *statistical* evidence thereupon. In the first place it would have been of great value had I been able to give positive information as to the proportion of patients suffering from disturbances due to the sudden induction of the menopause, and as to the severity of those disturbances. Much valuable knowledge might conceivably be obtained by studying the family history of hysterectomy

patients, and by comparing the histories of the patients prior and subsequent to operation. Furthermore, clinical or therapeutical facts are badly needed which bear upon the view advanced by modern physiology that the ovary is a ductless gland, having an internal secretion like the thyroid or the suprarenal capsule. There is no *a priori* unlikelihood in this. Some clinical facts strongly support this view, and in 1903 L. Fränkel, of Breslau, published the results of a series of experiments bearing on this. In the *Archiv. für Gynäkologie* (vol. 68, part ii.) he writes as follows: "The diseased embryologist, Gustav Born, of Breslau, is the only author of the original unpublished hypothesis that the corpus luteum verum graviditatis must, from its structure and development, be a gland with an internal secretion. I have come to recognize that the corpus luteum possesses a still more far-reaching significance. The fact, demonstrated in the sequel, that the corpus luteum presides over the embedding and early development of the ovum is a part of a greater law. The corpus luteum brings about the exalted state of nutrition found during sexual life. The increased size and vascularity of the uterus during the whole of this period, as also the monthly cyclical hyperemia, are due to the corpus luteum.

"Its continued activity brings about on the one hand the implantation and development of the ovum, and on the other, if the ovum remains unfertilized, induces menstruation. If the corpora lutea are wanting, the uterus atrophies and menstruation does not occur. The condition of the uterus before puberty and after the menopause is referable to the faulty operation of the corpora lutea. . . . Furthermore, I announce important practical therapeutic uses which a knowledge of the functions of the corpus luteum has yielded."

While this is an imposing and interesting theory, it is not yet uncontested. A recent American writer has opposed the view, and a limited trial of the theory from the therapeutic side, on my own part, hardly lends it support. A large series of hysterectomy cases might adduce evidence and side-lights on this question; for if it were carefully recorded in all cases whether or not the ovaries were removed during the operation, and if a material difference in the after history were found between patients with and without their ovaries, Fränkel's views would

be strongly corroborated. It is true that Fränkel's views relate mainly to the corpus luteum of pregnancy, but if they are true they cover also the non-pregnant condition. The difficulty of obtaining after-histories in detail from patients on the one hand, and the unfortunate incompleteness of the records on which my paper is based on the other, must reduce it from the level of statistical fact to one of clinical impressions, and these must be taken for what they are worth. The lack of this information in my records is the less to be regretted that since the materials for this paper were being collected, an interesting and most complete article on the subject, covering the points I have aimed at, has been published in the *Lancet* by that able surgeon and many-sided observer, Mr. Alban Doran (November 4, 1905). As to climacteric symptoms his conclusions are as follows:—

Of sixty cases both ovaries were removed in twenty-eight; of these, in three the menopause was neither immediate nor complete; in six the menopause was complete without symptoms; in nine the menopause was complete with distinct but mild symptoms; in ten the menopause was complete and the climacteric symptoms severe. In other words, in about sixty-seven per cent. where both ovaries were removed there were climacteric symptoms present, and in more than half of these they were severe.

In thirty-two ovarian tissue was saved; in eighteen the menopause was neither immediate nor complete; in fourteen menopause was complete; in four it was complete without symptoms; in four it was complete with slight symptoms; in six with marked symptoms, and there were no severe symptoms.

In other words, where ovarian tissue was saved, there were climacteric symptoms in only about thirty-one per cent., and of these none were severe.

This is sufficiently convincing evidence to show that conservation of ovarian tissue is of the highest importance for the after comfort of the patient. Other figures show also, contrary to what would be expected, that young subjects do not necessarily suffer more than old ones. Of the ten severe cases recorded by Doran, the worst case was thirty-eight years of age, and the next forty-one; while the two next in severity were forty-seven and forty-nine years of age.

In my own series of inquiries I have usually pursued a plan quite different from the above, where every detail possible was ascertained and registered, and every step towards the goal recorded. I have only inquired what the ultimate issue was—not the steps that led to it. Had I suggested, by inquiry, a number of symptoms, I have no doubt I should have succeeded in eliciting many. The answers that I received show that in the great majority of cases no mention is made of the intermediate symptoms, menopausal or other. If they existed they were trifling and transitory, and not thought worthy of mention by the patients. Analyzing more closely, it is found that nineteen patients (out of the forty recorded) had *some* after effects. Of these, twelve have distinct sequels of the operation, and nine have symptoms not due to it—such as ulcer of stomach, rheumatism, headache, rapid pulse, cardiac conditions present before. Two of the nineteen patients had some symptoms due to the operation and some not due to it—thus making a total of twenty-one. The twelve alluded to are Nos. 2, 4, 10, 11, 14, 15, 17, 22, 24, 30, 31, 37. All these I should class as slight; they include flushes (mentioned in six cases, probably present in others), “nerves shattered” (one), headache, disturbed vision, pain and swelling in leg (two cases, one present also before operation), “internal pains” (one), sutures irritating wound (one), hernia (one).

Those symptoms not due to operation were, gastric ulcer (one), rheumatism (three), cardiac conditions (three), recurrence (one), headache (one).

In only eight cases were the symptoms following operation volunteered, the rest being elicited by observation and questioning.

As already stated, my records are incomplete on the important point as to whether the ovaries were left or removed. In the early days the importance of these organs had not been recognized, and little or no notice was taken of them, unless very obviously diseased. Of the forty cases, in twenty no mention is made of the ovaries; in two cases both were left; in eight both were removed; and in ten one was removed. In two of the eight cases of double oöphorectomy the removal was performed some years previously. Of the twelve patients who had symptoms due to the operation, four had both ovaries removed (Nos. 10, 17, 24, 30), one had both ovaries left (No.

31); three had one ovary removed (Nos. 11, 14, 15); of the rest in four no mention is made.

Of the four who had both ovaries removed No. 10 had fairly considerable discomfort, but a large part was due to the development of a cervical mucous polypus, which could not be attributed to the operation. Nos. 17 and 30 had only trivial flushes. No. 24 had hernia of the scar. Two of the cases left without ovaries had only trifling symptoms, and one, the hernia, had no relation to the ovaries. There is thus no uniformity of result attending the loss of these organs. In the two cases where the ovaries were removed some years previously, the uterine tumor in one instance decreased but little, and remained well above the umbilical level, whilst in the other, after a temporary reduction in size, it rapidly increased.

One of the operations was performed well after the unaided onset of the menopause, and the size of the tumor was unreduced. This state of things I have repeatedly seen before, and have put some of the cases on record.

Of the nine cases with symptoms not due to the operation, in five no mention is made of the ovaries; in three both were removed; and in one, one was left. I should judge from my own small series that the after effects of operation are at least as much due to the condition of the patient before operation, as to the presence or absence of the ovaries.

In those with the most serious or distressing after-condition, operation might with advantage have been performed much earlier. Indeed, the more I see of the custom of deferring operation on account of the supposed proximity of the menopause, the less I like the practice. Only a few days ago a patient came to see me who four years ago had been advised by a lady gynecologist to defer operation for that reason. The patient had developed anemia, dyspnea, cardiac bruits in the interval; had wasted three and a half years of a life which should have been busy; was only just beginning to have lessening periods, and had a tumor as large as ever if not steadily growing. In cases 34 and 39 the heart never recovered itself properly, and in No. 39 it suddenly failed. Had hysterectomy been performed earlier, the first of these would never have developed the tachycardia, nor the second the cardiac dilatation. It is my belief that 75 per cent. of the disasters, immediate and remote, of hysterectomy might be avoided by earlier operation.

Another unfavorable symptom occasionally following is leucorrhea; this is not seldom explained by a cervical polypus, as in case No. 10. In several of Mr. Doran's cases (*loc. cit.*) menstruation persisted more or less regularly and in some quantity after hysterectomy. In two of my own this occurred with considerable regularity and quantity (Nos. 34 and 40), and in one (10) a sanious discharge existed intermittently, probably due to polypus; in one (14) several hemorrhages had occurred. It is supposed in these cases that some part of the corporeal endometrium was left, or that some of the cervical lining had taken on a corporeal character. Of these four cases, in one no information is to hand respecting the ovaries, in one both were removed (10), and in two one was left (14, 34). No. 10 was probably not a true menstruation at all.

Bearing down was complained of by two patients (Nos. 10 and 34). By a recent American writer this is regarded as a frequent sequela to hysterectomy. He recommends, to prevent it, that the ends of the round ligaments and of the fallopian tubes should be stitched to the uterine stump, and that the broad ligament should be folded and shortened as much as possible at the same time, so as to brace up the uterine stump and the vagina.

In conclusion, though this analytical review of my cases has furnished less scientific detail than I hoped at its commencement, it has nevertheless been one of the most gratifying pieces of clinical investigation that I have ever conducted. The responses, given in brief here, have shown so much satisfaction on the part of the patients, in spite of temporary discomforts, that the reputation of the operation is enhanced in my mind, and the trouble of the inquiry more than repaid.



MALIGNANT AND NON-MALIGNANT GROWTHS.*

BY WILLIAM SEAMAN BAINBRIDGE, M. D.

In his introductory remarks Dr. Bainbridge emphasized the fact that at no time in the history of America, and probably of

* A clinical lecture on cancer was delivered by Dr. Bainbridge in the clinic-room of the New York Skin and Cancer Hospital. A number of patients were presented whose cases illustrate the different stages of cancerous disease and the results of operative treatment.

the world at large, has the subject of cancer been so much in the minds of the people as at present, partly because there is apparently a real increase in its frequency, because it has carried off so many distinguished and useful citizens, and also because of the many theories as to its origin and cure which have been exploited within the last few years. He quoted statistics from the United States census to show that from 1850 to 1890 the mortality from cancer increased from 9 to 33.5 to every 100,000 population. The more accurate diagnosis of the present time, and the fact that more cases are reported, do not entirely account for this statistical increase.

In speaking of the unsatisfactory status of our present knowledge of cancer etiology, Dr. Bainbridge dwelt upon certain practical facts which are so far established as to be accepted by the medical profession. The more important of these are as follows:

1. All cancer begins as a benign growth.
2. There is, therefore, a true precancerous stage, in which removal is a sure means of relief.
3. The disease is absolutely local in its beginning, and if fully extirpated a cure should result.
4. Extension may take place by direct infection of the surrounding tissue, but it is usually through the lymphatic or blood channels.
5. There is a varying degree of malignancy, some growths tending to return more readily than others.
6. The system is poisoned by the production of toxins.
7. General malnutrition, as well as diminished vitality of the non-cancerous tissue in the neighborhood of malignant disease, as a rule, tends to increase the rapidity of the local extension and renders more likely the development of metastases.

The treatment of cancer was briefly epitomized by Dr. Bainbridge as follows:

I. *Non-operative Treatment.*—(1) Arsenic paste and other caustics; (2) liquid air, X-ray, Finsen light and radium; (3) bacteriotherapy; (4) serum therapy, which is, as yet, only in its experimental stage.

II. *Operative Treatment.*—(1) Removal, as far as possible, of all benign growths, especially those subject to chronic irritation or repeated trauma; (2) when malignancy is present,

early removal of the cancer, with a margin of a quarter or a half inch of healthy tissue and the extirpation of lymphatic vessels and lymphatic nodes in close relation to the disease; (3) in advanced cases as radical operation as is compatible with life; (4) when it is impossible to remove the disease, palliative operation for the amelioration of suffering and the prolongation of life.

The cases presented were classified as follows: 1. Precancerous stage (benign tumors). 2. Early cases. 3. Advanced cases. 4. Cases of irremovable but operable cancer.

The following patients were presented to illustrate the first class:

1.—*Angioma Hypertrophicum*, in a boy, about two years of age. Child was perfect at birth, but when two weeks old a small blue spot appeared under the skin of the upper lip, just below the septum of the nose. This increased in size rapidly until at the time of operation, May 6, 1904, the tumor practically embraced all the upper lip, extending well up around the alæ nasi and somewhat into the nasal cavity. The growth was extirpated as completely as possible, the incision extending on to the septum in both nostrils and around the alæ nasi. To prevent sloughing from too great tension a considerable redundancy of mucous membrane was left at the vermilion border. This redundancy was removed five months later and the lip shaped. When presented at the clinic, five months after the second operation, the scar is practically imperceptible. No tendency to return of growth.

2.—*Periconicula Fibroma of Breast*, in a single woman twenty years of age. At the time of operation, March 15, 1905, the entire right breast was found to be somewhat enlarged, nipple not retracted; a tumor the size of a lemon was found below the nipple, and two smaller tumors on either side of the breast, near the margin. Several enlarged glands found in the axilla. Through a circular incision below and to the outer side of the breast, at the juncture of the breast mass and the chest wall, the breast was separated from the pectoralis major and the capsule incised. Through incisions radiating toward the nipple in the substance of the gland the tumors were excised. The enlarged axillary glands were removed through the first incision. The capsule of the gland was sutured with catgut, the

entire mamma replaced, and the wound closed, absolutely no mutilation resulting.

3.—*Fibrolipoma of Back*, resulting from a sharp blow received two years previous to appearance of growth, and five years before operation. Female, colored, aged forty-four. At the time of operation, May 18, 1904, tumor weighed three pounds and was found to develop from the deep connective tissue between the first and second layers of muscles, two and one-half inches below the scapula. Removed by circular incision over the most prominent part of the tumor. Wound healed by primary union and patient was discharged in eight days. Very little pseudo-keloid formation, which, as well as true keloid, is so common among negroes, resulted.

A number of patients were presented to illustrate the second class, early cases of cancer, possibly the most interesting being the following:

1.—*Carcinoma of Right Breast*, in a woman seventy-three years of age. When operated upon, November 21, 1904, the tumor was about the size of a small egg, hard, nodular, adherent to the skin, but movable on the pectoral muscles. For about three weeks before operation tumor was tender, and pain was referred to axilla. A modified Halsted operation was done, the entire breast, the larger part of the pectoralis major, and the glands of the axilla being removed. The patient demonstrated to those present that she had perfect use of the arm on the affected side.

2.—*Epithelioma of Lower Lip and Glands of Neck*. Male, age seventy-five. About a year ago a small pimple appeared on the left side of the lower lip, disappearing in about three months under treatment with a caustic paste. Five months later a similar pimple appeared on the right side of the lip, but this persisted despite caustic pastes and electricity. The patient came under Dr. Bainbridge's care early in December, 1904. At the time of operation, December 29, the glands of the neck were not palpable, there was a hard mass on the right side of the lip and a slight indurated spot on the left side remaining after the use of caustic paste. Under chloroform and oxygen vapor anesthesia a wedge-shaped piece was taken from the scar on the left side. The submaxillary glands and others in close relation therewith were removed from the right side. The wound

was closed with silk and healed by primary union. The apparently unaffected glands on the left side were left pending pathological report. This report showed squamous-cell epithelium on the right side of the lip and glands of neck; left side negative. Acting upon this pathological diagnosis the patient was discharged. Two months later he returned to the hospital with palpable glands in the left side of the neck. Recurrence probably came from the left side, which, despite the negative pathological report, was undoubtedly cancerous. At a second operation, March 27, 1905, all glands in the left side of the neck were removed, and a suspicious spot of hardness on the right side at the base, close to the alveolar process, was excised.

The third class, advanced cases, was illustrated by several patients, the two most interesting cases being given below:

1.—*Epithelioma of Nose*. Female, aged sixty. For thirteen years has been treated in various cities and by various methods, but despite all interference the cancer has steadily grown worse. Operation February 15, 1905. An incision was made over the middle line of the nose, under the eyebrow, under the eye, down on the cheek. All diseased tissue, including a portion of the nasal process of the superior maxilla, was removed, the eye and the nasal duct being saved. A month later the edges of the wound were freshened and the surface of the wound covered by a flap taken from the inner surface of the arm on the affected side. The arm was placed over the head, the flap, still attached to the arm, was turned over and sutured by its inner margin to the face, and the head and arm encased in plaster of Paris, the opposite side of the face being exposed. When the wound was dressed five days after the operation the flap was apparently healthy.*

2.—*Extensive Carcinoma of Tongue and Neck*. Male, aged forty-nine. Mother died of cancer of breast at age of seventy-four. No history of specific disease. Used alcohol freely. Smoked twenty cigars a day for twenty years. Cigar always held in left side of mouth, resting against that part of the tongue which subsequently became the seat of the disease. In May, 1902, patient first noticed a small pimple, half-way back on the dorsum of the tongue. When he came under Dr. Bain-

* The flap has been detached, and at the present time the wound is entirely healed.

bridge's observation (December 26, 1903) there was a hard, crater-like ulcer (3 by 2 by 4.5 cm.), involving the left anterior third of the tongue, except at the tip. No glands palpable at this time. Microscopic examination of a section of the ulcer, made by two independent authorities, confirmed the diagnosis of a very vascular epithelioma. Immediate operation being refused, potassium iodide, a mouth wash and tonics were prescribed, and systematic X-ray treatment employed for nine weeks. The patient's general and local condition grew steadily worse. This treatment was discontinued March 1, by which time the growth had extended to the right half of the tongue and induration of the floor of the mouth was evident. Some cervical glands were distinctly palpable on both sides of the neck.

On March 11, under chloroform and oxygen vapor anesthesia, the following operation was performed: First incision, across the neck practically from the tip of the left mastoid process to that of the right, and below as far as the thyroid cartilage. Second incision, along the anterior border of the left sterno-cleido-mastoid muscle to within an inch of the clavicle. The submaxillary and sublingual glands on either side were removed and the salivary ducts extirpated clear into the mouth. Many cancerous glands were removed from the region of the tonsil on the left side to the dome of the pleura, and on the right side from the tonsil to the division of the carotid artery. The wound was closed except for a small drain at the lower part. The mouth was next forced open, part of the large cauliflower mass on the tongue cut down with Paquelin cautery. The cauterized surface was coated daily with Whitehead's shellac. The wound healed by primary union.

On March 28 a second operation was performed, when the left corner of the mouth was incised as far back as the edge of the masseter muscle, the tongue drawn out and completely removed by an elliptical incision on the floor of the mouth encircling the tongue in front and on each side. A flap of mucous membrane and muscle from the right glosso-epiglottic fold was used in making a bridge of tissue across the fauces in front of the epiglottis. The wound in the floor of the mouth was closed by chromicized catgut and covered with shellac. The wound in the cheek was closed in the usual way and shellac applied.

April 21, the patient was discharged cured. He weighed on entering the hospital 129 pounds, 139 when discharged, and 160 to-day. He is apparently perfectly well, is able to masticate even solid food, to taste, to talk intelligently, even to sing.

Illustrating the fourth class, the irremovable, but operable cases, the following patients were presented:

1.—*Epithelioma of Tongue*. Male, thirty-six years of age. For three years was treated for syphilis, which was not present. When epithelioma was recognized the right half of the tongue was involved by an ulcerated tumor the size of a quarter, a large number of the glands of the neck on the affected side were involved, the patient was suffering intense pain, and the condition had progressed to such an extent that there was little chance of total removal of the disease. November 25, 1904, the glands of the neck and the right half of the tongue were removed. In March, 1905, the patient returned to the hospital. He had been apparently well up to three weeks before, when the neck began to swell just below the ear and he suffered considerable pain. A second operation was performed, when the external carotid artery on one side was extirpated in its entirety, by the Dawbarn method, each branch being tied off separately.* As much as possible of the diseased tissue was removed. No recurrence found in the mouth.

2.—*Carcinosis of Abdominal Organs*. Male, orthodox Hebrew, forty years of age. Had been treated for a year at eight or ten dispensaries for indigestion. When he entered the hospital, the latter part of December, 1903, he was vomiting everything, and was very weak and emaciated. Stimulants and rectal feeding had to be resorted to. There was tenderness in the region of the stomach, where a tumor the size of an orange could be felt. When operated, January 5, 1904, a cancerous growth was found to involve part of the greater curvature and posterior wall of the stomach, with some constriction at the pylorus. There were nodules of carcinoma on the liver, in the omentum and transverse mesocolon. An anterior gastro-jejunosomy was performed by the McGraw method. The patient made an uninterrupted recovery, and at the end of ten weeks, resumed his work as a tailor.

* Three weeks after the second operation the external carotid artery on the opposite side was extirpated by the Dawbarn method. Patient has been discharged much improved.

In May, 1904, he began to vomit again. In this instance, however, vomiting differed from the first, in that he would eat all day, his abdomen would swell, he would retch, but could not relieve himself by vomiting, until he pressed his hands over the abdomen from right to left.

The patient was operated upon a second time in June, 1904, when the growth was found to have invaded the artificial communication between the stomach and the intestine, shutting off completely the passage of food into the distal loop of the intestine; thus the proximal arm of the gut was dilated, forming, as it were, an accessory stomach in which the food accumulated during the day. Another communication was established between the stomach and intestine by the McGraw method between the dilated proximal arm of the gut and the anterior wall of the stomach high up, and between the proximal intestinal arm and the intestine below. The patient made a speedy recovery, and six weeks after this operation began doing full work as a tailor. During the last three months he has had considerable pain, and the mass in the abdomen has grown steadily in size. He has lost a little flesh lately, but still weighs 135 pounds.



ANESTHESIA BY LUMBAR INJECTION IN OPERATIONS FOR ACUTE ABDOMINAL DISEASES.

BY HENRY P. DEAN, M. D.

The harmful effect of the administration of a general anesthetic, such as chloroform or ether, upon a patient suffering from an acute abdominal disease, especially peritonitis and appendicitis, has led to many attempts on the part of surgeons to do without this very serious hindrance to success.

Many cases have been reported in which cocaine anesthesia has been used for this purpose in two ways:

1. Locally, being injected under the skin.
2. Intraspinal injection in the lumbar region.

I have myself tried the first method on several occasions, and as a general procedure it is certainly out of the range of practical surgery. The second method, by injecting small doses of cocaine, generally about 1-4 gr., into the lumbar spinal canal, has been employed very largely, especially in France. I have

seen abdominal operations performed by this method; they were cases in which the anesthesia required was well below the umbilicus—an inguinal colotomy and a radical cure of hernia. In cases in which there is acute general peritonitis the effect of a dose of cocaine large enough to produce sufficient anesthesia would be to diminish the already damaged vitality of the patient.

These two methods, therefore, could be applied only in exceptional cases, and could not be looked upon as a regular surgical procedure for obtaining anesthesia in acute diseases of the abdomen.

The anesthetic under consideration is the chlorhydrate of one of the amino-alcohols. It has been given the name *stovaine*. This new body has been examined carefully, and researches made upon it in various directions have already been published. It can be used in all cases where cocaine is employed; for example, Paul Reclus states that he injects *stovaine* without fear in cases where he used to inject cocaine—that he has been able to perform operations which would not have been possible with cocaine.

Its chief physiological difference from cocaine is that it is a vaso-dilator, not a vaso-constrictor, and, further, it seems to have a tonic effect upon the heart. Hence the vascular system seems to escape all the harmful effects of cocaine.

When the anesthesia is required at, say, a low level, that is, at any place below the groin, the patient's general condition is not likely to make the use of a general anesthetic a matter of any moment. In such cases, whether *stovaine* is used or a general anesthetic is largely a matter for the patient to decide. It is then rather a question of taste, or perhaps I should say, of sentiment.

When, however, we are dealing with acute abdominal disease, especially general peritonitis, the value of *stovaine* anesthesia is at once placed upon a different level. It is no longer a matter of sentiment, but a matter of life and death. The harmful influence of a general anesthetic, such as chloroform or ether, upon acute abdominal diseases is, of course, well known. All of us are brought face to face with cases of acute peritonitis in which a general anesthetic would mean death to the patient, either on the operating table or within

a short time of returning to bed. Even if the patient escapes from this immediate effect, the subsequent vomiting, etc., often has a large share in exhausting his vitality.

My experience of stovaine anesthesia by intraspinal injection in acute general peritonitis has impressed me profoundly with the great value of this anesthetic.

Before describing the method I recommend, it will be as well to give the procedure that has hitherto been employed in intraspinal injection of this anesthetic.

1. Lumbar Puncture.—With a rather small trocar and cannula the lumbar spinal canal is entered between two lumbar vertebræ, generally the third and fourth. This point is usually upon a line drawn transversely across the back from one iliac crest to the other. If the patient is in the sitting posture with body well bent forward, it is quite easy to get through the interval at this level. If, however, the patient is too ill to sit up it is not quite so easy to enter this spot, because the patient lying on one side cannot so easily flex the spine. Again, if the patient is at all nervous, there is a tendency to move the lumbar spine forward. If this happen just as the trocar is going through the deeper structures one may easily miss the interval.

On one occasion this difficulty occurred to me. In this instance the only trocar available was much larger than I had used on former occasions, and as the patient was very nervous she jerked forward just as the trocar was passing through the tissues. For some reason or another I could not enter the theca vertebralis, and so I removed the trocar, and the patient was given chloroform in the usual way. I am sure that I perforated the ligamentum subflavum, and in all probability the trocar was lying between this ligament and the theca. This is especially likely to occur if the trocar is not a sharp one, and with a large trocar it is not so easy to perforate such a structure as the theca as it would be with a smaller instrument. If a trocar and cannula long enough for the stoutest patient were used for all cases there would be an awkward length of cannula projecting between the syringe and the skin, so that it is best to have trocars of three lengths suitable for men and women respectively; there is considerable disproportion between different individuals in the distance between the skin and the theca vertebralis.

2. The Dose.—The minimal dose of stovaine that can be given without fear of respiratory paralysis is half the ordinary capsule, that is, 0.5 c. cm. of the solution (0.05 gr. of the salt). If the anesthesia is required low down in the leg, quite a small dose, often as little as 0.3 c. cm. of the solution, is sufficient. With even less than the full amount in a capsule, for example, 0.6 c. cm., there is produced very often sufficient intercostal paralysis seriously to hinder respiration.

Sonnenburg reports a number of cases, among which the abdominal operations are: incision for appendix abscess, and an incision for the operation of appendectomy and gastro-enterostomy; there was no case of general diffuse peritonitis. Sonnenburg gives 0.6 c. cm. as a first dose, and if the patient is not sufficiently anesthetic in eight minutes, he gives another dose, using the trocar again; he does not say the amount of the second dose. Chaput gives 0.4 as the first dose, and a subsequent dose of 0.3 at the end of ten minutes, if necessary. The patient is again moved on his side for the injection.

3. Anesthetizing Period.—The anesthesia commences with a numbness of the perineum, feet, and legs in about three minutes from the injection. By the end of five minutes the patient is usually unable to lift either leg, but may move the toes or even ankles. Within seven minutes he is usually anesthetic up to the groin and in the scrotal and perineal regions; and the maximum effect is nearly always produced, whatever the amount of the dose, in ten minutes. If by this time sufficient anesthesia has not been obtained, some surgeons have at once resorted to a general anesthetic rather than insert the trocar again and give another dose. My own experience has led me to modify certain details in the method I have just described.

Graduated Dosage.—The first point of interest is that the same amount (0.6 c. cm.) was given in one dose to Case I and Case III, the two patients being operated upon within an hour of each other. This divergence of effect is only what one would expect on a priori grounds. If the same dose could be relied upon to produce the same effect in all patients, stovaine would differ from all other drugs with which we are acquainted. In these acute cases it is very difficult to estimate the amount that will be required to produce complete anesthe-

sia, and, owing to the danger zone of intercostal paralysis being near the limit of the anesthesia required, it is necessary to feel one's way. I consider that it is of paramount importance in cases in which the anesthesia has to reach the level of the upper abdomen to commence with a minimal dose and to be prepared to gradually increase it if necessary. This means that it is necessary to keep the cannula in until the maximum effect has been produced. Unless we have some means of finding out the amount of the dose beforehand, the method of gradual injection is imperative in acute cases of this kind. I commence with a dose of 0.6 c. cm. as a minimum; and if at the end of seven minutes it is obvious that the dose is too small, an extra 0.3 c. cm. should be given until the extent of the anesthesia required is obtained. This is the only way at present to avoid the danger zone of intercostal paralysis. The extra time taken to obtain a safe and definite amount of anesthesia does, of course, demand extra time and effort from every one concerned, but in these grave cases the gain of avoiding the general anesthetic is very great; in fact, this extension of time has this important advantage—that if the bowels are opened within the first few minutes after the injection of the dose, and this seems to be a very constant result, it gives time for the assistants to clean up the patient ready for the operation. This gradual method is the only safe way of producing sufficient anesthesia for acute abdominal diseases. In this way alone can we take precautions against being suddenly face to face with temporary paralysis of the intercostal muscles (see Case III). Although the diaphragm is not affected by the stovaine until the cervical cord is reached, yet in cases of acute peritonitis its action is often much interfered with, partly reflexly and partly by direct extension from the inflamed peritoneum.

Doses during Operation.—In Case I we see a complication which, of course, one might expect—namely, that after a certain interval the anesthesia tends to disappear. Even if we could foretell the exact length of an operation it would be practically impossible to judge beforehand the exact amount of the drug necessary. For about twenty-five minutes the anesthesia in this patient was perfect, so that if I could have finished the operation after making the first wound she would have felt nothing. As, however, it was necessary to make another in-

cision in the middle line at the time when the patient was beginning to lose the anesthesia, it would have been convenient to give another dose. To meet this difficulty I have arranged my apparatus so that the cannula can be left in during the whole of the operation, and therefore a small dose could at any moment be injected without hurting or, indeed, scarcely moving the patient.

Doses after Operation.—There is another aspect of this subject, though I have not yet had enough evidence to arrive at any definite conclusion, and that is the value of stovaine anesthesia during the post-operative treatment of the patient. It is quite possible that any recurrence of pain or abdominal distention might be dealt with by another dose of this anesthetic.

Surgical Shock.—The next point that naturally requires attention is the relation of stovaine anesthesia to surgical shock. When chloroform and ether anesthesia were first employed it was thought that surgical shock would probably be enormously diminished when operating upon a patient who was quite insensitive to the surgeon's knife. Experience, however, showed that this was by no means the case. Surgical shock in the ordinary sense of the word was, on the whole, not much affected by the administration of chloroform or ether. In the pre-anesthetic days the sudden shock produced by the first incision sometimes killed the patient at once by reflex cardiac inhibition. When the patient is sufficiently under a general anesthetic this form of shock practically never occurs.

The remarkable feature of intraspinal stovaine anesthesia is that surgical shock seems to be avoided. Patients with acute septic peritonitis, having extensive wounds inflicted upon the abdominal wall, with manipulation of inflamed viscera and flushing of the peritoneal cavity seem little if at all afflicted. All of us who saw these cases were impressed with the extraordinary calmness with which the patients stood the whole operative procedures.

In the literature of stovaine anesthesia, the absence of shock has been commented upon, but operations upon the lower extremities do not afford a good test of this question, unless the operation is a very serious one, such as amputation through the upper third of the thigh or at the hip-joint. I have not yet come across any records of amputations with stovaine anesthesia at this level.

Although aware of the fact that stovaine seemed to protect the patient from shock in operations upon the legs, I certainly was not prepared to see patients with acute general peritonitis protected in the same manner. I think, therefore, we may with confidence state that in all the stages of stovaine anesthesia, from the smallest degree up to the maximum limit, the patient is largely protected from the effects of surgical shock.

From a consideration of this aspect of the question, one can foresee that the benefits of rapid and precise operating will be more apparent in these cases than in those operations performed with a general anesthetic. In the latter cases it is so difficult to estimate the amount of shock produced because of the confusion brought about by the effect of the ether or the chloroform upon the nervous and vascular systems, so that the extremely rapid operating of the pre-anesthetic days was gradually dropped for more deliberate and slower methods; indeed, the swing of the pendulum seemed to go to the opposite extreme, and with general anesthesia the surgeon seemed to think that rapidity of operating meant want of thoroughness. With stovaine anesthesia the appearance of surgical shock would probably indicate either that the effect of the anesthetic was wearing off, or that the duration of the operation was in itself becoming a danger. Very often these two conditions might be at work at the same time.

Description of Apparatus Used.—Any form of trocar and cannula or exploring needle of small bore can be used if it is desired to evacuate only a certain amount of the fluid. If, however, we wish to inject something into the spinal canal without wasting a single drop, it is better to use an apparatus that has been designed for that purpose. If a large trocar and cannula of the type used for tapping a hydrocele is used it may cause a good deal of pain when inserted, so that the patient may arch the back forwards and render it difficult to hit the interval between the two vertebræ; further, these large trocars do not penetrate the softer structures so readily as the small ones, and hence may fail to perforate the theca itself; the trocar then lies between the ligamentum subflavum and the theca.

It is quite open to discussion whether trocar and cannula or an exploring needle with its stilette is the better instrument for the purpose. One is often struck with the fact that the softer

tissues seem to cling to the cannula, taking a good deal of force to push it into the tissues and to pull it out again. This objection does not seem to be so marked with the exploring needle. In either case it is advisable to lubricate the instrument with a little sterilized glycerine or oil. I lay stress upon these points because some persons when ill feel even a small prick very intensely, and the pain seems to last after the cannula is at rest; and therefore it is most important to employ a method which gives a minimum of pain, although the latter may be only of momentary duration. Freezing the skin of the back has the objection of hardening the skin, so that a great deal of force may be necessary to penetrate it, and this is felt by the patient.

If it is contemplated to inject one dose only, a simple trocar and cannula or exploring needle is all that is required. It would not be difficult to protect the part sticking out from the skin, so that it is not pressed upon during the time the patient is on the operating table. It is the terminal portion inside the spinal canal that might cause damage if there were unusual movement on the part of the patient or any extensive movements like that for artificial respiration should be necessary. To meet this difficulty I have designed a cannula which would be flexible, and its end would be rounded off so that no damage would be done in a sharp edge coming against any nerve or vessel in the theca. I think it will be possible to leave the flexible cannula in position. This, however, is an aspect of the question that further experience alone can decide.

The syringe used has to meet two requirements. It must be, of course, easily sterilized; secondly, it must be of sufficient capacity to hold at least 3 to 4 c. cm. of the solution. It is necessary to have one of this size at least, for the following reason: when the cannula is in position and the fluid escaping the pressure is generally sufficient to force back the piston and so to dilute the stovaine with the cerebrospinal fluid before the former is injected. As the cerebro-spinal fluid approaches in quantity that of the solution, a turbidity appears. The piston is then pushed gently along until all the solution has passed through the cannula into the spinal canal. The graduated syringes with the glass piston have the advantage that the cohesion of the two glass surfaces is slight enough to allow the

cerebro-spinal pressure to push back the piston. I do not myself think that this piston needs to be pushed back necessarily by the cerebro-spinal fluid, providing the operator gently pulls the piston back himself, taking care that the cerebro-spinal fluid is not sucked in forcibly. These glass syringes are easily broken and rather expensive. It is unwise to insert the glass nozzle into the cannula direct, because there is a great tendency for it to break. I have had made some small rubber nozzles which at one end are funnel-shaped, so that they can fit on the glass nozzle of the syringe. The other end is made to fit on to the cannula. In this way the glass syringe is much more easily handled, and the risk of clipping the glass nozzle is avoided. Further, this rubber tube is easily detached from the syringe and then clipped so that the cerebro-spinal fluid is prevented from escaping.

Dangers and Complications.—Sonnenberg reports a case in which the patient died a few days afterwards, and purulent cerebro-spinal meningitis was present. As the patient was suffering from general pyemia, the relation of the stovaine anesthesia to the meningitis may not have been direct. In many cases patients have a little headache coming on as soon as the operation is finished, but this generally disappears in a few hours. It would be very surprising if this form of anesthesia had no drawbacks, and if there were no mortality that could be attributed directly to the method of the administration of the drug, or to the drug itself. It seems, however, definitely proved that whatever the dangers may be, the mortality is by no means so large as with the general anesthetics.

Current Comment.

W. W. Williams, M. D.:

I note an authority's recent claim that the so-called *support of the perineum* is altogether unnecessary. I would be inclined to go a step further and say it is almost always harmful. But it seems to me that Nature has a way of sparing the perineum. I am sure many practitioners must have noticed that many women, towards the end of the second stage of labor when

the perineum is being stretched to its utmost, instinctively throw back the head and straighten the body so that the thighs and trunk form a straight line and sometimes, indeed, the back is hollowed out into a condition allied to lordosis. It has struck me that the reason for this position is obvious. The strong muscles of the back are attached to the sacrum and coccyx, so also are the perineal tissues. Now when the back muscles are relaxed, as they are when the body is in the position I have alluded to, the sacrum and coccyx have more "play," and therefore there would be less tension on the perineal tissues at the critical moment. I believe, too, that this position is in every way helpful to a woman at this stage of her delivery; her expulsive efforts are aimed more directly at the outlet of the pelvis—in other words, the parturient canal is made straighter. I always encourage women to assume this position at this particular stage.

♦ ♦

James Gardner, M. D.:

An important point in *occipito-posterior presentations* is the subdivision of these presentations made by the late Dr. West into bregmato-cotyloid and fronto-cotyloid. The former rotate with ease, the latter with difficulty, if at all, into occipito-anterior positions. Having made my diagnosis of occipito-posterior presentation, I devote my time to watching the movement and exact position of the anterior fontanelle to assure myself of the subdivision in which the case must be placed, for upon this the treatment depends. Bregmato-cotyloid cases will deliver themselves, extra time being allowed for the necessary reshaping of the head. Fronto-cotyloid presentation must be assisted, or, rather, ought to be assisted, by using Murray's occipito-posterior forceps. I can recommend these forceps, as I have used them in several cases, and know how easily they rotate the head. They are made to grasp the part of the head in the posterior half of the pelvis, not as ordinary forceps to grasp the part in the anterior half, are easily applied, and lock without difficulty, and by them force is exerted on the part which the accoucheur desires to move—namely, the occiput. It seems to me that these forceps imitate nature in their action; they do not turn the head round, but pull the occiput down first and then forwards under the pubes. No one need "think twice before using them."

C. G. Cumston, M. D.:

I will discuss the *pyelonephritis of pregnancy*. Dilatation of the ureter is not uncommon in pregnancy, and is due to compression of the ureter by the pregnant uterus at the superior strait. Hydronephrosis precedes pyonephrosis, and as in other forms of pyelonephritis the infection may be an ascending one from the bladder, or the bacteria may be carried by the blood to the kidney and renal pelvis. Clinically cystitis often precedes the renal infection, but in certain of the graver cases here reported the colon bacillus was found in the pus, and appeared to have been taken up by the blood from the intestine. In 3 of the 11 cases reported at length gastro-intestinal disturbances were practically coincident with the onset of the general symptoms of pyonephrosis, suggesting that an increase in the virulence of the colon bacillus brought to the kidney from the intestine was a factor in the causation of the disease. In 2 of the cases cold and overwork appeared to be important secondary causes. The onset of the symptoms is usually in the fifth or sixth month, or later, and never before the end of the third month of pregnancy, that is, never before the uterus rises out of the true pelvis. The condition must be diagnosed from cystitis and from perinephritic abscess, and when the diagnosis of pyonephritis has been made, causes such as traumatism, tuberculosis, or renal lithiasis must be excluded before the condition is held to depend on the pregnancy. There are many mild forms of the disease, such as the latent form described by Bredier, in which the only symptom is the presence of polyuria, the urine being cloudy or containing pus. In other cases the general symptoms may be severe, the temperature rises to 39° or 40° C., and the fever may take on a hectic character. In the gravest forms in which the kidney ceases to be painful, while the retention of pus persists and the general condition becomes aggravated, active interference may be needed in order to save life. The best treatment is then the induction of labor, after which recovery usually occurs. Nephrotomy has been advocated for the benefit of the child; but, on the one hand, nephrotomy does not always prevent miscarriage or spontaneous premature labor, and on the other, there is the danger of causing the formation of a permanent renal fistula. I would reserve the treatment by nephrotomy for cases in which even after miscarriage has occurred or labor been in-

duced the kidney is still not adequately drained, and symptoms of infection continue.

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W. Williams, M. D.:

I divide the *vomiting of pregnancy* into three varieties—reflex, neurotic, and toxemic—each of which is dependent upon etiological factors and demands especial methods of treatment. I find that vomiting occurs in more than half of my private cases, but not so frequently among hospital cases. Reflex vomiting may be due to the presence of abnormalities of the uterus, especially displacements; to endometritis, to ovarian tumors, to abnormalities of the ovum, such as hydramnios, hydatidiform mole, and certain cases of twin pregnancy. Kaltenbach considered that the vast majority of cases of vomiting of pregnancy were due to a neurosis more or less allied to hysteria. He thought that latent hysteria might become manifest under the influence of pregnancy. These cases of neurotic vomiting are frequent, but it is possible that the underlying cause of the neurosis may be a mild toxemia; the evidence is at present unsatisfactory.

The toxemic nature of the vomiting of pregnancy has received much support; four main theories have been advanced attributing the source of the toxic material respectively to the gastrointestinal tract, the ovum and its appendages, ovarian secretion, and hepatic lesions. In certain cases of toxemic vomiting there is a marked disturbance of metabolism, which is manifested by a decrease in the amount of nitrogen excreted as urea and a great increase in the ammonia coefficient; it must be left to future investigators to determine whether the change is directly due to the inability of the diseased liver to effect complete oxidation or whether it is a manifestation of an acid intoxication or some other condition. We are still ignorant concerning the nature of the toxic material and whether it is derived from the fetus or the mother. Vomiting is pernicious when it interferes seriously with the taking of food or produces marked emaciation. It is important to decide whether one is dealing with the reflex, neurotic, or toxemic variety, as treatment depends upon this distinction.

A careful vaginal examination should first be undertaken to discover the presence of abnormalities, and then a thorough chemical examination of the urine should be made and the

ammonia coefficient determined. In normal pregnancy, and even in neurotic vomiting, the ammonia coefficient varies from 3 to 5 per cent., in the toxemic type it may reach 32 to 46 per cent. It is probable that an increase to 10 or 15 per cent. would justify a diagnosis of toxemic vomiting and would indicate the termination of the pregnancy. A rise of temperature and pulse-rate is not always present, even in the most serious cases; dark-colored vomit and jaundice are ominous signs. In its later stages the vomiting of pregnancy has been mistaken for eclampsia, especially if the patient has been comatose; the two diseases differ clinically, chemically, and histologically.

From the evidence at present available it appears that there are two varieties of the toxemia of pregnancy, one giving rise to eclampsia, or the pre-eclamptic toxemia, and the other to the vomiting of pregnancy and acute yellow atrophy.

The prognosis is good in the reflex and neurotic forms, provided they be properly treated; the outcome is generally fatal in the toxemic form unless the pregnancy is promptly interrupted.

As regards the treatment of the reflex form it is necessary to remedy any displacement of the uterus which may be present, to remove ovarian tumors, and, should hydramnion or hydatidiform mole be diagnosed, to terminate the pregnancy. The neurotic variety should be isolated under the care of a nurse, feeding by mouth should be stopped, and saline and nutrient enemata be given by the rectum. If this is not effective removal to hospital or the threat of an abortion will often tend to produce a rapid improvement. In toxemic cases abortion affords the best chance of saving the patient. After the uterus has been emptied saline injections by the rectum or subcutaneously are indicated, and if vomiting persists the stomach should be washed out with a weak solution of sodium bicarbonate, even ice should be withheld till vomiting has ceased.

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Florence Boyd, M. D.:

I will describe two cases of primary *carcinoma of the female urethra*. The patients in both cases were fifty-one years of age. The first patient complained of having had pain about the vulva for the last six months and of an increasing frequency of micturition. On examination a urethral growth was detected which, as seen through the stretched urethral orifice, was as

large as the index finger. The urethro-vaginal septum was hardened and thickened in about half its length; there were no enlarged glands in the groin. At the operation the growth was removed, 1-4 to 1-2 inch of the urethra being left; the urethra was fixed by stitches beneath the pubic arch, the mucous membrane of the vagina behind was united to that of the nymphæ in front by catgut stitches and the urethral mucous membrane was held to the surrounding mucous membrane by two or three interrupted sutures. After the operation, which was otherwise successful, incontinence of urine developed, and when the patient was last seen incontinence had become complete. At this time the urethra was held to the left side of the pubic ramus by scar tissue, and the index finger could be passed without resistance directly into the bladder; the mucous membrane of the bladder prolapsed anteriorly. The growth proved to be a columnar-celled epithelioma, and probably had originated either in the mucous glands of the urethra or in Skene's ducts. There has been no recurrence of the growth in the four and a half years which have elapsed since the operation.

The second patient had suffered for about six months before she came for treatment from pain on micturition; for two months there had been blood in the urine, and for three months increasing frequency of micturition. In this case the growth involved the orifice and posterior wall of the urethra throughout nearly its whole extent, and infiltrated the adjacent anterior vaginal wall as well as the tissue of the fossa navicularis beneath the pubic arch; a large hard gland could be felt on the inguinal region on the left side, and smaller glands on the right side. It was found possible in removing the growth to leave 1-4 inch of the vesical end of the urethra; and as with the finger a definite contractile ring could be felt to remain, it was decided to fix the urethra in the wound, in the hope that the patient might retain control over micturition. The urethra was stitched to the posterior vaginal wall by interrupted catgut sutures, and to the subpubic ligament by a stitch which did not pass through the mucous membrane. The large wound was almost covered by bringing the parts together and turning in flaps from the labia. The growth was a squamous-celled carcinoma, and may have been either a peri-urethral or vulvo-urethral growth or a primary carcinoma of the mucous mem-

brane of the urethra. The results of the operation, with regard to control of the bladder, were at first exceedingly good, but as cicatrization proceeded the result was not maintained, and after about two months there was complete incontinence. In view of the more favorable results in this respect which have been reported by Kynoch, Thomas, and Fritsch, I think that it may have been a mistake to try to obtain primary union of the urethral and vaginal mucous membranes. The cases suggest that when it is necessary to remove the urethra above the triangular ligament, closure of the urethra and suprapubic drainage may afford the greatest relief to the patient.

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F. R. Horel, M. D.:

My position as to *fibroids complicating pregnancy* is made clear in the following résumé:

Prophylaxis. Every fibroid during the child-bearing period, with few exceptions, should be attacked by surgical means.

During pregnancy. Safe fibroids, i. e., those beyond the dilating zone of the uterus, should be carefully watched. Every complication during pregnancy depending upon the fibroid should warrant our attacking surgically the condition, or at least provoke us to the indication for emptying the uterus.

During labor. Again, safe tumors need watching. The resultant complications must be met energetically, but gently, as they arise, i. e., hemorrhage, tardy labor.

Sloughing and necrosis of a puerperal fibroid must not be mistaken for retained secundines. This doubt must be eliminated by exploration with the clean aseptic hand. Retained secundines are always to be removed manually, and under no condition must the curette be employed, because of the great danger of laceration of the capsule, and consequent sepsis.

Sloughing and necrotic fibroids are always to be attacked surgically, either by enucleation or by a hysterectomy.

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H. S. Lott, M. D.:

Of cases of *ectopic gestation*, occurring in the distal half of the tube, with growth and development there and elsewhere within the range of possibilities, two notable ones have come under my observation and care.

The first one was a colored woman. She was about twenty-six years of age, and had been married several years without

any pregnancies. Her attending physician reported that she had been suffering for several days with very severe abdominal pains, and that hypodermics of morphia had failed to give her entire relief. The patient's condition, at the time of my visit, bore out his description. I found her lying on the bed, moaning with the pain, and unable to keep in one position.

Seating myself at the bedside I watched her for a while. The woman seemed to be well nourished, and in very good physical condition. The eye was clear and bright, the tongue clean, and the lips of a healthy color. The breasts gave no distinctive evidence, and there was no enlargement of the abdomen. The pains were distinctly recurrent and paroxysmal; the woman's attitude during the height of their intensity, suggesting an expulsive character. As the wave of pain arose the pulse would quicken, she would change her position constantly in bed and make very bitter complaint of her sufferings.

Upon making a vaginal examination, I found very little to help me. There was a normal, virgin uterus, in relatively good position. No mass could be detected on either side, and there was no marked tenderness at any given point in the vaginal vault. In passing the hands over the abdomen wall, the sensitiveness of the left side was slightly more marked; but in the generally hyperesthetic state of the woman, this gave little guide as to any localized focus or point for attack.

The woman's menstrual periods had been fairly regular. Some pain at each time, but not excessive in degree. It was now six weeks since she had menstruated, the flow failing to appear when last due.

Believing that such was the case, I told the attending physician that his patient had an extra-uterine pregnancy, saying that I could think of no other process in nature that could cause her to be in this condition and advised an immediate operation for her safety and relief. In sheer desperation my diagnosis was accepted, and on the following morning the patient was placed on the table, in a negro cabin.

The abdomen was opened in the median line. Upon introducing the exploring fingers, the uterus was found and normally located. The tube and ovary of the right side were free and normal. On the left side, tracking from the fundus down, the tube and ovary were fixed to the pelvic floor; and half-way

the distance of the tube was a gestation sac about the size of a walnut. This was an expansion of the tube, and also on the point of rupture, which occurred almost as soon as the fingers came in contact with its presenting surface. Accompanying the rupture was the escape of a small quantity of watery fluid. Fearing hemorrhage, I at once enlarged the rupture and freed from the cavity a spongy mass entire, which proved to be a complete placenta, about the size of a silver dollar, with normal attached, or uterine, and fetal surfaces. No fetus was found.

Placing a silk ligature about the tube close to the fundus, and also one near its distal extremity beyond the point of expansion, I removed the portion of tube between these ligatures. Feeling that I had accomplished my object in removing the product of conception, no attempt was made at removing the ovary from its fixed position to the pelvic floor.

Inspection of the portion of tube removed confirmed the feel it had given to the fingers, that it was an expanded fallopian tube having harbored a gestation sac, and being on the point of rupture.

Being in some doubt as to the perfect toilet of the operation, and for the sake of safety, a gauze wick was carried down to the site of removal and brought out at the lower portion of the incision. Above this point the abdomen was closed with interrupted through-and-through silkworm-gut stitches. The gauze was removed after twenty-four hours, from which time the granulation was rapid and healthy: all above this point uniting by first intention, and the stitches were removed on the tenth day. The patient's recovery, with immediate removal of distressing symptoms, was practically uneventful.

This case seems to me to be of interest for several reasons: for instance, the gestation sac could not have been more than six weeks advanced, and I have seen no report of a case found this early. And again, because the diagnosis was necessarily made from rational signs only, guided chiefly by the recurrent and paroxysmal character of the pains, which were exaggerated, no doubt, because of the erratic location of the gestation sac, and finally leading us to believe that it is an inherent power of the ovum, and not the peculiar structure of the uterine walls, which causes the normal, rhythmic contractions of pregnancy and childbirth.

The second case was a much simpler one, inasmuch as the

diagnosis, at the time of my visit, was comparatively easy. The patient was white and about thirty-five years of age. She had given birth to seven full-term children, and at the time of this accident there was one child two years old, just weaned.

The history given me was, that some weeks before, while in town she had a sudden, severe pain in her stomach, followed by a fainting spell. She was given a sedative and ordered kept quiet for a while, before being taken to her home. Since this time, she had, for the most part, been confined to her bed with the frequent recurrence of fainting spells, either with or without much exertion.

Having a child at the breast, the irregularities in the menstrual flow, or even its seeming absence, had given her no solicitude, and she had not believed that she was pregnant.

At the time of my visit she looked as one who had lost much blood; the face was blanched, the pulse quick and thready, and the slightest exertion would cause a fainting spell.

Upon physical examination the abdomen was found to be somewhat full and very sensitive. Entering an ample vagina, the finger detected a uterus which had rather the feel of a subinvolted than that of a pregnant one. On either side of the cervix throughout the vaginal vault, there was a fullness, somewhat like that of a presenting bag of water, although of rather more resistance, while behind the cervix, bulging well down from Douglas' pouch and covered only by the retro-vaginal wall, was unmistakably the leg or arm of a fetus four or five months advanced.

The diagnosis of extra-uterine pregnancy being concurred in by the attending physician, the gravity of the woman's condition was explained to herself and her family and it was decided to remove her to the hospital. Being nine miles distant and a very rough road to travel this was rather a serious matter, with a woman almost in collapse. However, with stimulants and careful driving, it was accomplished, and although it was near midnight, no time was lost in preparing her for operation.

With a pair of long half-curved and sharp-pointed scissors, the vaginal vault was punctured just behind the cervix and just where could be felt the presenting part of the fetus. Introducing two fingers of the left hand and exchanging the sharp for blunt-pointed scissors, this opening was rapidly enlarged until it reached each lateral wall. To grasp its lower extremities,

and deliver the five-months' fetus through this opening was a very quick and a very simple matter, and one that was accompanied by an immense gush of black fluid blood and clots. The quantity of this I am afraid to estimate, but it was very large, being the accumulation of several weeks' hemorrhage. Being told that the patient had no pulse (which was a great comfort (?) to me at this juncture) I asked that she be given some salt solution; and, working rapidly as possible, by passing my hand well up into the cavity, which was on the right side of the uterus, I emptied it of blood clots and cleared away as much of the placental growth as seemed consistent with the safety of the structures to which it was attached.

The flow of black blood was really alarming and several times the patient was thought to be dead; but I irrigated the cavity with several gallons of hot water, and finally by using very long and rather heavy wicks and carrying them high up I packed it pretty full of gauze, and she was taken from the table breathing occasionally and with a very feeble pulse.

For several days it was a case of anxious watching and waiting, as the thread of life had been stretched to a very small fiber indeed. Stimulants were given constantly and the cavity was irrigated once or twice in each twenty-four hours with several gallons of hot water, until at last a faint smile of hope on the faces of the faithful nurses who had given me their help gave me hope for the patient as well.

A most interesting feature in the after-care of this case was the sympathetic involution of the uterus, as this process progressed in the neighboring structures where the gestation had occurred.

Beginning soon after the removal of the fetus at each irrigation there would be quite a free and pinkish flow, just like a normal lochia, from the mouth to the uterus. This continued for about ten days, gradually lessening in quantity, and finally bringing away shreds, like cast-off mucous membrane. During this time the entire uterus diminished much in size, and the cervix lost its full, congested appearance.

The recovery of this patient was very slow and very tedious; but after five weeks in the hospital, she returned to her home in pretty good condition. Within the eighteen months following this accident, she conceived and carried a normal pregnancy to about the seventh month, and from that time her health has been most excellent.

Removing the fetus through the vaginal vault, was not the method of my choice. Going in from above and making a clean removal of the ruptured tube, with safe ligation of all bleeding vessels, would have been a much more complete operation, lessened her dangers afterward, and very much hastened her convalescence, *if* she could have survived the more prolonged tax of her vitality. This was the question confronting me, and while I did not favor the vaginal route, I felt that I must defend, not only a principle and a preference, but the life of my patient as well.

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Jos. D. Bryant, M. D.:

I have seen some very difficult *fractures of the patella*, some with a long ligamentous union, but I never yet have seen a case in which the patient could not, after a little while, get serviceable use of the limb. My position has always been this: Given a fractured patella, which history teaches will recover in a great percentage of cases with a serviceable limb, should I expose the patient to danger in order to secure an ideal result? I have said no. There are those in the cities and country, however, who wire the patella under all circumstances. I mean by that simply because it is broken. I know of one surgeon who has wired two hundred. I have wired thirty, but in each instance there was good reason for doing it besides the fact that it was fractured. I know of surgeons who are equally as good in all surgical procedures as can be possibly pointed out who have yet to wire their first five. Of the thirty I have wired excellent results have been obtained in all but two. One died of delirium tremens, therefore the wiring cannot be blamed for it. The second was a case of extra-articular sup-puration. No doubt I was the cause of it, because the circumstances were such that I could lay it nowhere else except to myself or my assistant. It was a private patient. In the house we should be surrounded with everything that will contribute to asepsis, so far as external surroundings are concerned. As I say, I wired thirty. I do not expect to wire any more, even with all the suggestions that have been made concerning it.

I regard the operation which consists of throwing a string or catgut through, tying it tightly and drawing it together, fixing the fragments firmly, as is necessary for union, just

as good as wiring. In that way the shortness of the operation makes it unnecessary to introduce foreign bodies, or lay the foundation for any subsequent disease of the bone. I find in this operation, which I have tried but once, that the fragments are as firmly opposed, as far as union is concerned, as though they were wired.

So far as the incision is concerned, formerly I made a transverse incision through the skin and aponeurotic structure until later on, while here I made a simple vertical incision and used one small wire, paying no attention whatever to lateral lacerations. I reasoned in this way: That in the ordinary way the patella is shortened, but if treated in the ordinary way the patient secures a good serviceable limb; therefore, the question whether or not the lateral structure should be repaired cannot enter into it. It was possible to draw them together too tightly, and it might interfere with the proper function of the limb. Whether it was right or wrong the results were entirely satisfactory.

With regard to meddling with the joint. I think I must add my testimony to those who are inclined to think it dangerous to meddle with the knee-joint. I do not believe it can be put on a par with the peritoneum, because we know the peritoneum absorbs most rapidly everything that is precipitated into it. Numerous experiments have been conducted to that effect. I do not believe it is wise, unless one is positively certain of their asepsis, to introduce the finger into the knee-joint. I do not believe it is dangerous to all to introduce the finger into the peritoneum. Verified theory in reference to introducing the finger into the knee-joint, during my practice, has been to establish thoroughly that it should not be done. Never introduce the finger unless it is protected. If unprotected, always use an instrument for the purpose.

There is something also to be said in connection with drainage. You may say, if one is positive of his aseptic treatment there is no need to drain. I agree with that, but can one always be positive? I don't know. I think not. If he is always positive he has been sometimes mistaken, because supuration does occur; and, therefore, in instances where there is any doubt in my mind regarding it I always introduce a pair of scissors, pointed scissors curved on one blade, through one side and out through the knee, and put several threads of

silkworm-gut through it, not because I believe it is infected, not perhaps because I have any reason to believe that it will become infected; but if it should be infected for any reason I may be promptly made aware of the fact by the presence in the joint of suppurative forces, which ordinarily take some little time. I suppose I do that in twenty-five per cent. of the cases. I do it in cases where for some reason I feel there may be infection lurking.

The proper after treatment is massage, commenced in about a week or ten days. I have given up, however, any attempt at passive motion. Allow the patient to get on his feet, using the massage. Use the limb carefully, after he can walk without the splint, of course, and secure control of it by his own cautious movement. Fortify the knee-joint by a splint which admits of but a certain amount of motion, so that it is impossible for the patient by any incautious movement to cause premature injury.



Ferdinand Rees, M. D.:

I will refer to *midwifery of the present day*. Twelve years ago I knew an able general practitioner in large practice who gave chloroform and used forceps in the large majority of his midwifery cases. He argued that his mission was to save his patients as much pain as possible, so long as he could do it with safety to mother and child.

Now for the swing of the pendulum. Dr. Horrocks makes one vaginal examination accompanied by an elaborate asepsis ritual, drawn out over a period of twenty minutes, with not too much regard for any innate feelings of modesty on the part of the victim. Then he says: "I have made a thorough examination of the presentation and the pelvic diameters. I can assure you that your case is one of the 95 per cent. normal cases. Labor is a physiological process. 'In pain shalt thou bring forth.' Good day! I will call again later."

As our asepsis and antisepsis become more perfect, why should we become more frightened of making vaginal examinations? Is it absolutely necessary that a living-in woman should endure a regulation amount of pain? What is the use of our knowledge and skill, our anesthetics and anodynes, if there is to be no diminution of human pain? How did we get into the habit of putting on binders? Because experience taught us that the women felt more comfortable after labor with binders on. Why do midwives and nurses usually put support on the abdomen during uterine pains? Because the woman feels that it helps her, and gives her comfort. Why do

midwives usually follow the birth of the child with the hand on the abdomen? Because experience has taught them that they thus obtain a well-contracted uterus, a shorter third stage of labor, and less liability to post-partum hemorrhage. Does experience count for nothing? Because labor is a physiological process, is the woman to get no outsider to lend her a helping hand, but must she be left to fight the battle alone?

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Arthur H. Bill, M. D.:

There is perhaps no one thing in obstetrics which is more annoying to the physician than a persistent *occipito-posterior position*.

I shall not attempt to discuss the various methods employed for preventing these positions and for correcting them when already present, previous to the onset of labor and during labor before the rupture of the membranes,—I mean such methods as postural treatment, external and combined manipulation, etc.,—but I shall confine myself to those occurrences of posterior position which, in the course of labor, form such an obstacle that it becomes necessary to resort to operative interference for the accomplishment of the delivery. It is in these cases that there is such a marked difference of opinion and uncertainty as to the safest and best method of procedure, and on account of this uncertainty there is usually a tendency to let the case take its own course and only interfere, often too late, when this is an absolute necessity in order to save the life of the mother or child.

The procedure advocated is the one first described by Scanzoni. It consists of two distinct applications of the forceps. First, they are applied directly to the sides of the head with the concavity of their pelvic curve anterior, as if to an anterior position. Thus the pelvic curve of the forceps looks toward the face instead of toward the occiput as in anterior positions. Then, with a large swinging movement of the handles, so as to keep the blades of the forceps in the pelvic axis, the head is rotated until the occiput is anterior. This part of the maneuver is a rotation pure and simple without simultaneous traction. When the occiput is anterior, the forceps are naturally inverted and must be removed and reapplied, as to a head in a normal anterior position, in order to complete the delivery. After the rotation is completed and before removing the inverted forceps it is well to draw the head down slightly to fix it more firmly in its new position and thus prevent a return to its former posterior position.

In view of the slowness with which the Scanzoni maneuver (which I have found to be an excellent one and to give by far the best results) is being adopted in this country, it would seem that any good results obtained from its use would be

worth reporting. In several cases I used the method while connected with the New York Lying-in Hospital.

To hurriedly sum up these cases, I find that they furnish examples of occipito-posterior positions in all the various planes of the pelvis; at the brim and complicated by a moderate contraction of the pelvic inlet, engaged but within the cervix, in the true pelvis but above the spines, and at the pelvic outlet. In all of these cases practically the same maneuver was carried out to accomplish the rotation, and in each case it was successful. In my last two cases, in which the occiput was in the hollow of the sacrum, it is barely possible that in time there would have been a spontaneous though difficult delivery. Of course the occiput would have been to the rear, and as the heads were both large, the delivery would probably have been accompanied by a laceration of the perineum, which was avoided in both cases by bringing the occiput to the front, even though it was necessary to rotate the head through an angle of 180° .

In view of the good results accompanying this procedure, it would seem to be a perfectly justifiable and advisable one in all such cases, to prevent the unfavorable delivery in the posterior position. It is an operation which naturally appeals to one since it converts the abnormal into the normal position.

In regard to the effect upon the child, no bad results were noticed in any of these cases, and it would seem that, from a consideration of the safety of the child, the rotation of the head may be said to be a perfectly safe procedure. After experimenting with this maneuver and after trying it thoroughly in the Tarnier clinic in Paris, Budin and Demelin have concluded that there is no danger whatever to the child even in those cases, which are rare, in which the shoulders do not follow the head in its rotation, and even though the head be rotated through an angle of 180° .

In view of the fact that this method of treatment is not generally adopted, and by many held to be impracticable, it would seem that failures were due more often to the method of performing the maneuver than to a faulty principle. It is an operation in which all the details should be closely followed, and I wish to mention a few points which are essential to its success and safety.

The blades should be applied accurately to the sides of the head, and not simply with regard to the pelvis. This is more easily accomplished, especially in the oblique and nearly transverse positions, by means of the solid blade forceps.

The head should be held firmly in the grasp of the forceps during the rotation, to prevent slipping and a possible consequent injury to it.

In cases in which the sagittal suture is in the oblique diameter

of the pelvis, it is absolutely necessary to draw the handles of the forceps well over to the thigh opposite the occiput before rotating.

In performing the rotation, the blades of the forceps should be kept as nearly as possible in the axis of the pelvis by a large swinging movement of the handles, which thus describe a large circle externally. If the last two rules be strictly adhered to, it will be found that the pelvic curve of the forceps will offer no obstacle whatever to the rotation, and furnish no disadvantages when compared with perfectly straight forceps, the use of which has been suggested.

No attempt at rotation should be made while the head is within the cervix, as it is a dangerous procedure, liable to be followed by a rupture of the lower uterine segment. In cases in which the head is high up and partially within the cervix it is far better to draw it entirely out of the cervix first of all, and to perform the rotation lower down in the pelvis.

If there is a tendency for the head to return to its posterior position immediately after removing the forceps for the re-application, this may usually be overcome by drawing it down somewhat after complete rotation and before removing the blades. In more obstinate cases the head may be held with the fingers of one hand applied along its side during the removal and reapplication of the forceps, or simply one blade of the forceps may be removed and reapplied before the removal of the other, and thus one blade is kept constantly in a position to prevent a return to the posterior position. This latter procedure is, however, rarely necessary.

If these essential points are carefully followed, the operator will meet with success in practically all posterior cases, and be able to avoid lacerations of the maternal soft parts, which would in all probability occur if the head were delivered in the occipito-posterior position.

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Catherine Smith, M. D.:

I attended a confinement in which the labor was normal but the child was born dead. In a few minutes most *violent hemorrhage* set in, and the patient became pulseless and collapsed. Pressure on the fundus, ergot, etc., had no effect, and I found on placing my hand on the vagina that the uterus was acutely anteflexed and the os wide open. By external and internal manipulation I brought the uterus into its normal position. The os immediately closed and the hemorrhage ceased. To prevent recurrence I carefully plugged the vagina, and especially Douglas's pouch, with lint dipped in antiseptic. I removed the plug next day, and the patient made a good recovery. Since making these notes she has been confined again, and there was no hemorrhage.

Translations.

Rapidity and Slowness in Operation.—Doyen (*Revue de Thérap. Médico-Chir.*) points out that before the discovery of anesthetics and antiseptics, the short duration of operations diminished the nervous shock to which the patient was necessarily subjected. Antiseptics and anesthetics caused a swing of the pendulum in the opposite direction, which remained in force for some time, especially in the case of intestinal surgery, the early pylorotomies of Péan and Billroth lasting five to six hours. In 1892 the writer protested against the excessive length of some operations. It is not a matter of indifference to prolong to an excessive length difficult abdominal operations, since such will not be satisfactory unless performed with irreproachable technique in the shortest possible time. In order to acquire particular skill in the longer and more delicate surgical operations, the operator must be first of all a first-class general surgeon. The chief object of the surgeon is the cure of the patient. Since there can be no question of antisepsis, all that is necessary is to choose the means calculated to give the greatest chance of success. After discussing a hysterectomy such as was performed in 1892, the writer gives the following rules: Devote your attention to the neighboring tissues, limit ligatures to main vessels, and you will do but little damage; lose but little blood, and your field of operation, clean cut and dry, will be ready for repair. The majority of operations can be divided into two main parts: (1) Excision or removal of the diseased part, and (2) repair. In order to finish an operation well and quickly, giving the patient the best chance of success, the disease should be removed rapidly, giving the major portion of time to the repair of the field of operation. By rapidity of operation during removal loss of blood is reduced to the lowest possible, the field of operation remains dry and ready for repair, the careful doing of which is the essential condition for success. It must be borne in mind that rapidity does not mean hurry, since hurry may spell some imprudent manipulation, prolonging the operation, perhaps causing irreparable damage.

Repair must be a matter of much care. A considerable extent of serious lacerations, the lack of mobility of pelvic peritoneum, may cause a prolongation of ten to twenty minutes, and there must be no question of attempting to shorten this period by haste, since on good and proper repair depends the life of the patient. Manual dexterity is the first qualification of a surgeon, else of what use to him are correct diagnosis and indications for operation? Some operations consist in removal

only, such as opening an abscess or empyema, or extirpation of nasal polypi; such should be done quickly and simply. On the other hand, plastic operations, the cure of intestinal and vaginal fistulæ, are "repair" operations, and must be done with care even at the cost of time. Excessive length of operation leads firstly to useless bruising of the tissues and organs in the neighborhood of the operation, the integrity of which is essential to good union; and secondly to compromising the patient's life by increasing tenfold the risk of infection and surgical shock.

The future in surgery is for the handy, for those who have the greatest skill and technique at their command.

Fractures of the Calcaneum.—Chabanon and Jacob (*Gazette des Hôpitaux*). The writers point out that since the advent of radiography much new work has been done, chiefly with reference to the mechanism of fracture, and to the pathological anatomy. Formerly considered as of rare occurrence, recent statistics tend to prove that the fracture is by no means uncommon. The larger proportion occurs in men, and after the age of forty.

The most common cause is a fall from a height on to the feet, then direct violence from a heavy body, such as a cart-wheel, etc., and, lastly, the violent contraction of calf muscles. The mechanism of the fracture was formerly described as the result (1) either of definite crushing (*écrasement*), as in a fall from a height, or (2) of "tearing" (*arrachement*), the conditions being those of a lever of the second class, and the posterior portion of the *os calcis* being pulled upwards by the action of the muscle.

Recent observers have combated this last method, and their writings tend to show that cases considered as fractures by "tearing" are really fractures by "crushing," with the detachment of the posterior fragment. At the same time, definite cases of fracture by tearing have been reported which radiography has confirmed.

In cases of fracture by "crushing," authors vary as to whether the great apophysis, the small apophysis, or the postero-external articular surface, is the primary seat of fracture.

The writers, abandoning former classifications, describe two varieties of fractures: (1) Fractures of the body (the middle portion); (2) fractures of the apophyses or tuberosities. Of these, the first is the commoner, and although not always limited to the middle portion, yet this, and the part subjacent to the astragalo-calcaneal articulation, is the point of origin of the fracture.

Of fractures of the body, the writers note three degrees:

1. Sinking of the postero-external articular surface into the

underlying tissue. This surface, normally oblique, becomes horizontal, an important diagnostic point in radiography.

2. In fractures of the second degree the bone becomes remarkably altered in shape, becoming flattened and broadened.

3. Complete destruction of the bone takes place.

All these fractures may be complicated by fracture of one or other of the tuberosities or apophyses.

Of the fractures of the apophyses or tuberosities, the authors note (1) fracture of the large apophysis; (2) fracture of the small apophysis; (3) fracture of the great tuberosity (total or partial); (4) fracture of the trochlear apophysis (i. e., the tubercle from which arises the perineo-calcaneal ligament). In addition, fractures may be single or double, intra- or extra-articular.

Of the physical signs, those marked are swelling, ecchymosis, and effusion, and the foot tends to be slightly flat, and valgus and malleoli are lowered so as to be nearer the ground. The malleoli are not disturbed in position, but under them may be felt a semicircle of bone, especially marked under the external malleolus. There is also visible thickening of the calcaneum, with a diminution in the vertical diameter. Other less important signs are flaccidity of the tendo Achillis and of the gastrocnemii. These are the signs of the common variety of fracture. In other cases the signs are more or less marked, according to the particular variety of fracture.

Among the complications may be reckoned: Fracture of the calcaneum and astragalus and fracture of the calcaneum and Malleoli, compound fractures, necrosis, gangrene, etc.

In discussing diagnosis the writers lay stress on the value of radiography, while in treatment massage and early passive movement is of importance.

Removal of Cerebral Cysticercus.—Bronca (Bull. et Mém. de la Soc. de Chir.) reports on an interesting case communicated by Waquet, of Jacksonian epilepsy with left-side hemiplegia caused by an encysted cysticercus in the right Rolandic zone, which was exposed by trephining and removed with good results. The subject of this case was a young butcher who at the age of twenty-three had, in the course of a fortnight, two sudden falls with loss of consciousness. Three months later he had an attack of convulsions commencing in the left arm, which was also associated with loss of consciousness. In the course of the next five years convulsive attacks were repeated every third or fourth month, two or three occurring on the same day. In the spring of 1905, when the patient was twenty-eight years old, the convulsive crises were associated with hemiplegia on the left side. The patient when first seen by Waquet in June had from 250 to 300 convulsive attacks in the course

of twenty-four hours, the convulsions always beginning in the left upper extremity and afterwards extending to the rest of the body though less intense on the right side. In the brief intervals of calm there was an absence of sensorial disturbances, of headache, and of ocular symptoms. Waquet trephined over the right Rolandic line, and after incision of the protruded and non-pulsatile dura, exposed a cyst with transparent walls and containing a clear fluid and a loose glairy body made up of four or five transparent vesicles. The cyst, it is thought, was situated in the fissure at the junction of the upper and middle thirds, and did not involve the thickness of the cortex. The transparent mass on histological examination presented the characters of *Cysticercus racemosus*, a form of cerebral entozoon which, though a frequent cause of "staggers" in sheep, is rarely met with in man. The operation, it is stated, resulted in radical suppression of the convulsive crises and in gradual restoration of movement from above downwards, in the left upper limb. The patient, when seen after an interval of four months from the time of the operation, was quite free from functional trouble. Broca in his comments on this case refers to two others of a similar kind reported by Tietze and Troje in which the prominent symptoms were Jacksonian epilepsy and hemiparesis. The good results of operative intervention in all these three cases show a marked contrast between the benignity of cysticerci under surgical treatment and the serious mortality of operations from the removal of hydatid cysts which often communicate with the cerebral ventricles.

Sudden Death on Operating Table.—Guinard (Bull. et Mém. de la Soc. de Chir.) reports a case of sudden death of a patient suffering from long-standing pelvic suppuration, on whom he was about to open an abscess in the left iliac fossa. After some few inhalations of chloroform, the pupils suddenly dilated, and the respiratory and cardiac movements ceased. This fatal event, which at first was attributed to chloroform, was found on *post-mortem* examination to have been due to a large embolus that had been detached from the iliac vein and become entangled in the cords of the tricuspid valve. Both iliac veins, it is stated, were surrounded by inflamed tissues, and whilst the left vein was empty, that on the right side contained a clot resembling that found in the heart. Guinard, though disclaiming any idea that every death occurring at the commencement of anesthesia by chloroform is due to cardiac embolism, is convinced that this is not an isolated case, and that in submitting a subject of deep-seated venous coagulation to surgical operation, there is undoubtedly a risk of the clot being detached during the movement of the patient to the theater, or during the cleansing of the skin at the seat of operation, or

again, as a result of the patient's excitability in the early stages of the administration of the anesthetic. This case, it is urged, indicates the necessity of making a *post-mortem* examination in every instance of supposed death from chloroform.

Symphysiotomy after Failure of Pubiotomy.—Jessen (Zeitsch. f. Geburtsh.), attended a woman, aged thirty-five, for lingering labor at the end of her third pregnancy. The pelvis was of the flat rachitic type, the conjugata vera 3 3-10 in. Her two children died during birth; one was delivered in turning. She longed for a living child and would not consent to premature confinement. Prochownik's diet was enforced. At 6 P. M. on November 5, the pains began; by 3 P. M. on the 6th the head was still above the brim, although the pains were strong. The colpeurynter, applied on the previous day, was expelled by 11 P. M. One hour later pubiotomy or hebotomy was performed. There was much bleeding from the short incision over the os pubis. Just as the saw had divided three-quarters of the thickness of the bone it broke. Jessen enlarged the cutaneous incision without provoking any fresh hemorrhage, and divided the symphysis, gaining 2 3-10 in. The head at once became deeply engaged. The fetus was promptly and without difficulty delivered with forceps. It was saved, although at birth it was very livid and with the funis twisted three times round its neck. As the head was being delivered the vaginal wall was lacerated behind the side of the attempted pubiotomy, 1 1-2 in. from the vulva; the cervix showed a bilateral laceration. All these tears were closed by suture after expression of the placenta. Five weeks later the patient was able to walk without waddling. There was no callus over the saw wound in the bone, but the part was tender.

Torsion of Tubal Sac at Term.—Schauta (Zentralbl. f. Gynäk.) attended a woman, aged forty-four, pregnant for the third time. The second pregnancy (gemellar) had ended eleven years previously. On this third occasion seven bad attacks of crampy pains and vomiting occurred during the first two months, then ceased; fetal movements were felt in the fifth month, and two very severe attacks of pain set in at the end of the seventh, when the fetal movements ceased. In the ninth month bleeding occurred, and Schauta detected signs of pregnancy in the breasts and vulva. A moderately movable tumor filled the greater part of the abdomen, the uterus could be defined clearly in front of the mass. Abdominal section was performed in the tenth month. A large tubal sac was exposed, strongly adherent to omentum. It was twisted two turns on its pedicle, and (as in all cases except Martin's) on

the distal side of the ovary, which was removed with the sac after ligature. There was no difficulty in taking away the parts entire. On opening the sac after a removal a macerated, fully developed fetus, over 6 1-2 pounds in weight and 19 inches in length, was discovered. Schauta claims his case as the first instance of torsion of a tubal sac where pregnancy went to term. The twist was on the distal side of the ovary, as in five out of the entire six cases on record; this fact implies that the sac is usually developed in the ampulla well external to the ovary. In all the cases except Schauta's the complication occurred at or much under the fifth month. In Littauer's patient the sac was twisted completely off its pedicle, a condition not unknown in axial rotation of ovarian dermoids.

Tuberculous Nephritis and Cystitis in the Female.—Mirabeau (*Monats. f. Geb. u. Gyn.*), after close study of the subject for several years, has come to the conclusion: (1) That tuberculosis of the bladder in women is, without exception, a secondary process, descending from the kidney, and stands in no direct relation to genital tuberculosis; (2) in at least fifty per cent. of all cases renal tuberculosis is unilateral; (3) by means of the cystoscope and ureteral catheterism diagnosis may be made absolute; (4) detection by palpation of a thickened ureter is practically sufficient, and can be effected by practitioners not specially experts in renal and vesical surgery; (5) in unilateral renal disease descending to the bladder the full functional activity of the healthy kidney can usually be determined by clinical observation and by chemical and microscopical examination of urine isolated by ureteral catheterism and the segregator; if not, examination of the kidney itself may be necessary; (6) early removal of the tuberculous kidney is sometimes the best treatment. Mirabeau performed nephrectomy on a patient suffering from unilateral renal tuberculosis in the fifth month of pregnancy. The patient was delivered at term of a healthy child, and was in very good condition two and a half years later.

Uterine and Ovarian Syphilis.—Franceschini (*Clinica ostetrica*) draws attention to the importance of syphilis as a factor in gynecology. He is of opinion that, apart from puerperal complications, nearly the whole of gynecology is due to the gonococcus and the syphilitic virus, and that if this were more generally recognized fewer useless mutilations would be performed; that the etiological importance of syphilis in the pathogeny of diseases of women is neglected, and that the gynecologist should be a competent venereologist. An ovarian gumma may simulate an ovarian tumor. Many cases of uterine hemorrhage and ulceration suggesting cancer may be

cases of late uterine syphilis. In the same way that leucoplasia of the tongue is transformed into cancer, so may gummatous ulceration of the uterus gradually undergo a cancerous metamorphosis. Late syphilis is often a stage in the evolution of cancer. The author has several times seen cases of late uterine syphilis which were regarded as cancer completely cured with specific treatment. Also antecedent syphilis can be found in the majority of cases of uterine cancer. He also reports the case of a woman, infected five years previously with syphilis, who suffered from rebellious hemorrhage and ovarian pains, which disappeared after specific treatment.

With regard to the diagnosis between uterine and ovarian syphilis in cases of rebellious hemorrhage, the author points out that an intermittent character in the hemorrhage points to ovarian disease. Syphilitic sclerosis of the ovaries is probably more common than is generally supposed, and is characterized by the following signs: (1) By hypertrophy or atrophy of the ovary, which can be sometimes found by examination; (2) by abundant hemorrhage, occurring first in the form of menorrhagia, then in the form of small losses of blood, and finally as abundant intermittent metrorrhagia; (3) by the absence of pain during the hemorrhage; (4) by the absence of morbid signs in the uterus and tubes; (5) by the negative results of ordinary treatment; (6) by the immediate effect of anti-syphilitic treatment. The author concludes that "whenever a woman dies of hemorrhage by metrorrhagia without presenting material lesions, one may be certain that the hemorrhage is due to an unrecognized syphilis."

Pregnancy, Tumor, or Both? (*Monats. f. Geb. u. Gyn.*).—Notwithstanding the familiarity of the doctor with pregnancy, and the hundreds of pages which have been written on the diagnosis of pregnant uterus from abdomino-pelvic tumors, and on their frequent coexistence, errors of diagnosis are not rare even amongst experienced gynecologists. Schröder, of Bonn, reports a case of vesicular mole pregnancy where this error was made. The patient was forty-nine, and had been normally delivered eight times. The periods occurred regularly up to a month before she came under Schröder. A little hemorrhage occurred a week after the last period, and for a fortnight subsequently the abdomen became steadily larger in bulk. The patient was very sickly; a movable, tense, elastic tumor reached to the level of the umbilicus; it could not be distinctly defined from the uterus above. The cervix lay high up behind the symphysis, and Douglas's pouch was occupied by a portion of the tumor, which filled the lower part of the abdomen, a condition very deceptive, for evident reasons. The age of the patient also seemed to contra-indicate pregnancy.

The diagnosis was malignant ovarian cyst, closely connected with the uterus. Abdominal section was performed and then it was discovered that the tumor was the uterus—the seat of vesicular molar pregnancy; posteriorly there was a large sacculated process which bulged downward into Douglas's pouch and had led to the error in diagnosis. The uterus was amputated above the cervix, and not till then was the sacculatation clearly recognized. Everke, in a discussion on Schröder's case, reported how a doctor diagnosed ovarian cyst obstructing labor. He applied the forceps in vain, and then put the patient under chloroform and endeavored to burst the cyst by firm pressure, a questionable proceeding which fortunately failed. Everke, to whom the patient was prudently confided, found Cæsarean section necessary. As the tumor lay entirely below the uterus he closed the wound and reached the tumor by a vaginal incision into Douglas's pouch. It was a myoma, weighing one and one-half pounds, and was easily removed by enucleation. Laubenburg reported an obstructed labor case. The head did not descend into the pelvis, and a firm, elastic, smooth, round tumor of the size of a fist occupied the concavity of the sacrum. The patient was the wife of a medical man, and twenty-five years of age. Laubenburg was called in and decided to turn. Just as he was delivering the head the tumor was felt to give way with an audible popping noise. The tumor steadily diminished in size, and at the end of a few months after labor nothing could be felt except a hard mass in the right broad ligament. The above cases are highly instructive, especially as lessons in humility about our own powers of diagnosis.

Calculus of Wharton's Duct.—Prudencia de Pena (*Revista Med. del Uruguay*) records a case of lithiasis of Wharton's duct. A man of thirty came at night with a submaxillary swelling of twenty-four hours' standing, soreness beneath the tongue, and great malaise. The speech was much interfered with, and examination of the mouth showed the tongue raised in level, the mucous membranes very red and edematous, and beneath, near the frenum, a roundish, white opalescent spot, sharply defined, showing fluctuation, and excessively tender. The movements of the tongue were much limited, the expression one of intense anxiety. Temperature 99.5°, pulse 106, headache, and great sense of illness, the general appearance being that of a person with angina Ludovici. Exploration of the sublingual white spot revealed the orifice of Wharton's duct, on probing which a rough substance of stony hardness was felt. Pressure around it brought to light a stone, smooth and rounded on its upper surface, but rough beneath, and about 3 mm. in diameter. Its re-

moval was followed by a flow of dark-yellow pus. The patient experienced relief, and was disinclined for further interference, but showed no improvement in the morning. Pus still oozed from the duct. At night the condition was much worse; the temperature had risen, the pulse was 120, and the urine very scanty and dark mahogany color. The local conditions were worse. Further examination revealed a second, but much larger stone, in this case 1 cm. in diameter, of cubical form and rough surface. No more could be found, but there was a discharge of pus as before. The patient recovered slowly but steadily, and was well in a week's time. No examination of the structure of the stone appears to have been made.

Treatment of Thoraco-Abdominal Wounds.—Caplesco-Poenaro (Bull. et Mém. de la Soc. de Chir. de Bucarest) puts on record two cases of penetrating wound involving both thorax and abdomen, and traversing the diaphragm, in which combined thoracotomy and laparotomy were practiced with successful results. In both cases the injury consisted in a stab between the eighth and ninth ribs in the right hypochondrium. The pleural cavity having been exposed and explored, and a wound through which the finger could be passed into the abdomen having been found in the diaphragm, laparotomy was performed, and lesions discovered in the peritoneal cavity were dealt with. In one case in which there was free bleeding from a superficial rent in a much-enlarged spleen, a partial ligature was applied to the pedicle of this organ. In the second case the author found a wound of the stomach which was much distended by a recent meal and abundant extravasation of gastric contents into the peritoneal cavity. The wound, which involved the anterior wall of the stomach, and was about 3 1-2 cm. in length, was sutured, and the abdomen washed out and drained. In the first case the wound in the diaphragm was sutured from its thoracic surface after partial resection of the ninth rib. Both of these patients, who were young men, made speedy and complete recoveries. The author publishes these two cases with the object of confirming his opinion that, in order to prevent late complications, both abdominal and costo-diaphragmatic exploration may be assumed as indicated in instances of penetrating wounds of either hypochondrium.

Intermittent Hydropsy of the Gall Bladder.—Villard and Cotte (Rev. de Chir.) hold that the radical cure of intermittent hydropsy of the gall-bladder is entirely a surgical matter. Medical treatment, it is true, will very often afford relief, and hygienic measures will diminish the frequency, and retard the

recurrence, of painful attacks, but still the patient will evidently remain the subject of serious hepatic lesion, ever ready to reveal its existence, and the effectual cure of which can only be attained by the use of the knife. In cases in which the intermittent hydropsy is due to biliary lithiasis, the surgeon, it is held, should as a rule have recourse to cholecystostomy, or the operation of cholecystendysis in which the gall-bladder, after the opening in its walls has been carefully sutured, is returned into the abdominal cavity. In the choice of one or the other of these two procedures, the operator should be guided by the condition of the biliary passages. The absence of inflammatory lesions, and free permeability of the cystic and common ducts, would justify the so-called "ideal" operation, which, as is shown by the recent experiences of Löbker and Küster, is free from danger in experienced hands; but in most cases, the authors think, the preference should be given to cholecystostomy. Cholecystectomy, which is an excellent operation in cases of complete and decided obliteration of the cystic duct, is not indicated in the treatment of intermittent hydropsy of the gall-bladder. As it does away with the possibility of any ulterior derivation of bile, whether externally or by the intestine or stomach, it has the disadvantage in instances of secondary calculi in the deep bile ducts of necessitating choledochotomy, which when performed in such conditions is a difficult operation. In dealing with intermittent hydropsy due not to cholelithiasis but to flexure of the cystic duct resulting from displacement of surrounding parts, as, for instance, cholecystoptosis, movable liver, or floating kidney, the surgeon must direct his immediate efforts to the fixation in its normal position of the displaced organ.

Modification in Technique of Lateral Intestinal Anastomosis.—Kuster (*Zentralbl. f. Chir.*) gives his method of applying Murphy's button in lateral intestinal anastomoses, which his experience has proved to safely shorten and simplify the operation. In a resection, before closing the divided intestine by sutures, an assistant fixed the half of a Murphy's button a little way from the end in the lumen of each, the divided ends having been fixed with a double row of sutures. The central portion of each half of the button was pressed through a small cut made over it from the outside. The button is then fixed together in the usual way, without sutures, unless the intestinal opening is too large. Much time is saved, and the liability of fecal effusion reduced to a minimum.

Raynaud's Disease in Children.—Sommelet (*Thèse de Paris*), who has collected statistics, is of opinion that Raynaud's

disease occurs as frequently in children as in adults. He met with six cases in one year. The writer raises the question whether Raynaud's disease differs in the child and the adult. He is of opinion that ulceration and tissue destruction are slight in the former, impairment of function is less marked, and there are practically no general symptoms. In children the disease follows vasomotor disturbances. Local syncope and asphyxia constitute general evidence, and there is usually considerable pain.

Treatment of Congenital Luxation of the Hip.—Hendrix (*Journ. de Chir. et Ann. de la Soc. Belge de Chir.*) holds that in the bloodless treatment of congenital luxation of the hip complete reduction of the head of the femur, notwithstanding elongation and a much improved position of the limb, is really in most cases not effected. The luxation, he states, is transposed and not reduced, the head of the femur being placed not into or over the cotyloid cavity, but just below the antero-inferior iliac spine. This transposition, which has been demonstrated by the methodical application of the Roentgen rays, is attributed in the first place to the abnormal condition of the cotyloid cavity, which in cases of congenital luxation is converted into a shallow triangular depression without any prominent and overhanging margin above; and in the second place to a change in the direction of the neck of the femur, which instead of diverging, as in the normal condition, upwards and inwards, is anteverted or carried forwards, so as in extreme instances to form an angle of 90° , or it may be more, with the line it would have taken under normal anatomical conditions. With the object of overcoming the tendency to transposition the author, after forcible displacement of the head of the femur, rotates the limb inwards and fixes it in this position during a period of not less than four months. In his concluding remarks the author states that in every case of congenital luxation of the hip, whether this be simple or complicated, treatment by bloodless methods still remains, and indeed will long remain, a difficult matter. Each case has its individual physiognomy, and presents some special difficulty. The secret of success, it is held, depends on the care taken by the surgeon to make out the state of the neck of the femur and, immediately after reduction has been effected, to rotate the lower limb inwards to a degree corresponding to the degree of anteversion of the neck, and to maintain for a sufficient time the limb in this position. This method, the author states, has afforded a high percentage of good results, and been attended with a success superior to that indicated by the majority of published statistics.

Book Reviews.

THE SURGICAL TREATMENT OF CHRONIC SUPPURATION OF THE MIDDLE EAR AND MASTOID. By SEYMOUR OPPENHEIMER, M. D., Otologist and Laryngologist to Gouverneur Hospital and Mt. Sinai Hospital Dispensary. P. Blakiston's Son & Co., Philadelphia, 1906.

During the past few years the better understanding of the morbid processes connected with the ear and communicating structures, the application of broad principles of surgery and antiseptics have given a very clear aspect to otological problems, heretofore treated more or less expectantly. The radical operations have developed largely as the result of the study of chronic suppurative otitis media with its mastoidal and intracranial complications. These principles with careful methods of diagnosis have been very clearly set forth by Dr. Oppenheimer in a very exhaustive and profusely illustrated work. The reader is led from the lesser conditions gradually to those diseases requiring the highest form of otological and cerebral surgery. The work is well illustrated with half-tone plates, key plates all engraved from dissections made under the supervision of the author.

A TREATISE ON SURGERY. In two volumes. By GEORGE R. FOWLER, M. D., Examiner in Surgery, Board of Medical Examiners of the Regents of the University of the State of New York; Emeritus Professor of Surgery in the New York Polyclinic. W. B. Saunders & Co., Philadelphia and London, 1906.

The second volume of this publication maintains the interest and excellence of Volume One in its exhaustive treatment of "Regional Surgery." Those chapters devoted to "Surgery of the Abdominal and Pelvic Regions" are particularly interesting in that they not only represent the best practice of the day, but it was in the surgery of these situations that Dr. Fowler's work will be best known to posterity. Although rather unusual in a work of this general character, the sections on pelvic surgery are complete in every detail, giving the usual operations found in works on operative gynecology. Special reference might also be made to the chapters on "Surgery of the Upper and Lower Extremities." To sum up, the treatise in its entirety from the standpoint of detail, practical excellence and illustrations we feel is the best product of several seasons.

ASHTON'S PRACTICE OF GYNECOLOGY. By W. EASTERLY ASHTON, M. D., LL. D., Professor of Gynecology, Medico-Chirurgical College, Philadelphia. W. B. Saunders & Co., Philadelphia and London. Second Edition, 1906.

Dr. Ashton conceived the idea of writing a book on the "Practice of Gynecology" in which nothing would be left to

the imagination and nothing taken for granted. He apparently assumed that the reader in perusing a chapter was reading one that he knew little or nothing about, hence was given complete information. If it concerned an operation, full indications, number of assistants, illustrations of the instruments employed, technique, special variations of technique and after treatment were given in such a way as to give the most inexperienced operator all the assistance possible. The popularity of this idea is evidenced by the rapid exhaustion of the first edition and the demand for the second, which is revised and enlarged.

OBSTETRICS FOR NURSES. By JOSEPH B. DE LEE, M. D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. 12mo of 460 pages, fully illustrated. Philadelphia: W. B. Saunders & Co., 1904. Cloth, \$2.50 net.

Although this work was written, as the author states, primarily for nurses, yet from our interesting examination of it we firmly believe that medical students will find in it much of value, since the duties of a nurse often devolve upon him in the early years of his obstetric practice. There are really two subjects considered—obstetrics for nurses and the actual obstetric nursing—and Dr. De Lee has combined them so that the relations of one to the other are natural and mutually helpful, presenting this important branch of medicine in a clear and interesting form. The illustrations have not been borrowed from other works, as is too frequently the case, but have been made expressly for this book. The photographs were taken by the author from actual scenes, and are true to life in every respect. The text is the outgrowth of eight years' experience in lecturing to the nurses of five different training schools.

A COMPEND OF OPERATIVE GYNECOLOGY FROM LECTURES. By WILLIAM SEAMAN BAINBRIDGE, M. D., Adjunct Professor of Gynecology on the Cadaver, New York Post-Graduate Medical School and Hospital, etc., 1906. The Grafton Press Publishers, New York.

From a careful examination of Dr. Bainbridge's published lectures we are of the opinion that his course must be very interesting as well as valuable to the post-graduate students. Over sixty operations, representing the technique of the best surgeons and the most popular procedures, are given with such anatomical details as are necessary for a proper comprehension of the operation.

In addition there is a chapter on "Miscellaneous Points," which are certain data and suggestions useful to the surgeon. This little volume is invaluable to the student and very convenient for the practitioner to refresh his mind on the technique and after treatment of those operations most usually performed.

THE JOURNAL OF SURGERY GYNECOLOGY AND OBSTETRICS.

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EARLY DIAGNOSIS IN CASES OF PELVIC TUMORS AND DISEASES.

BY C. B. KINYON, M. D.

"There is no organ in the belly except the suprarenal capsule which at some time or other has not given rise to symptoms almost identical with those of an ovarian tumor." Bland Sutton made the preceding very emphatic statement, and add to this the fact that even after the abdomen is opened, it is not always easy to tell the exact origin of the tumor, and we will see at once that we are dealing with a subject which requires careful training and excellent judgment to tell just what to do in many cases. It is even more difficult to tell beforehand with what we are dealing in the cases of tumors and diseases of the pelvic cavity. For this cavity is more difficult of access. Fortunately for the reputation of the physician and the welfare of the patient, it is not always absolutely necessary that an exact diagnosis should be made before deciding the line of treatment best to follow in a given case. Simply decide whether or not surgery is indicated. It is essential that the physician have a fairly accurate idea of the immediate dangers and probabilities of an operation. The earlier he reaches these conclusions the better can he care for his cases.

It is with the view of assisting in reaching a correct conclusion in time to give the best treatment that I offer these few suggestions. It is possible for a physician to know, in a general sort of way, too much about a given subject to be able to make a concrete, practical application of his knowledge at the bedside. His extensive knowledge, unless very definitely classified may be confusing. This is especially true of what is often to be found within the closed cavities of the body. It is better for him to have a few clean cut differential points regarding the conditions to be met with in a given locality and then he will be the better able to reach a correct conclusion and a better decision as to what should be done. I now wish to offer, in as few words as possible, for time will only permit the merest mention of (a) ovarian tumors, (b) encysted collections of serum within the pelvis, (c) pus, blood or serum in the tubes, (d) fibroids of the uterus or broad ligaments, (e) retroflexion of the gravid uterus, (f) hydatidiform mole, (g) pelvic abscess, and (h) last but not least, ectopic gestation. In all these cases it is safe to make the general statement that the sooner the conditions are ascertained and the correct diagnosis made, the more surely will the proper treatment be given. Another general statement applicable to these cases is this: In all cases the lapse of time makes the patient's chances of ultimate cure much less. While in some cases it takes but a short time to carry the patient to an incurable stage, or it may be a speedy death, there are but two conditions in which delay is likely to be beneficial under any circumstances. These are in a certain limited number of cases of acute gonorrheal infection of the tubes and in large diffuse pelvic abscesses due to infection of the colon bacilli. Even in these cases it is, as a rule, best to give free outlet to the products of infection where this can be done without endangering any important structures.

Please allow me at this point a slight digression. A general practitioner of experience, with keen powers of observation and analysis, will often make a better diagnosis than a specialist. On the other hand, if he is not careful, there will be a tendency, on the part of this same observant physician, to delay operation too long. Let us, as much as possible, avoid these extremes. A few words as to the best method of telling the exact condition of the uterus and its appendages and their

relation to the pelvis and its contents will save repetition as each diseased condition is considered. In the great majority of cases these relations can only be accurately determined with the patient under an anesthetic. First, notice the mobility and position of the uterus; second, whether there is a deposit or growth in the pelvis and locate as well as determine the character of this mass. This can be done with reasonable accuracy, in the great majority of cases, with two fingers well up in the rectum and the other hand pressed firmly down upon the abdomen. The two fingers can outline the fundus, note its size, location and consistency. They can be swept up each side of the uterus and note the condition of the tubes and ovaries. Of course during all this manipulation the cervix is held firmly with the volsellum and is pushed up or from side to side or pulled down as necessary to settle all points of diagnosis.

I will now call your attention to a few sharply defined symptoms which will help the attendant to make an early diagnosis in the conditions above mentioned. The later developments in these diseases will make the conditions so manifest that anybody can make the diagnosis, but the early diagnosis is the all-important one. Ovarian tumors can be told by their location and especially by the presence of fluctuation, or the wave line of Spencer Wells. By the shape and their separation from the uterus they are readily differentiated from fibroids of the uterus. The latter move with the uterus, while the former do not, and there is a line of demarcation between them and the uterus until the tumor has reached a large size. In cases of hydro- or pyo-salpinx, the tube may be so much distended as to make the diagnosis doubtful, but as a rule the shape of the growth and the history of the case will allow a differentiation from ovarian cysts. Pus or blood in the tube may cause great distention and make a definite diagnosis impossible from the sense of touch alone, but the pus tube has a history of infection and inflammation and the tube distended with blood has a history of sudden onset and is much harder than pus cases. Dermoids of the ovary and ovarian fibroids can usually be differentiated by the consistency and rapidity of the growth, the former being more rapid as a rule. I might add that the dermoids are more liable to undergo changes due to infection and when they are thus infected their contents are very poisonous, more so even

than pus tubes. Accumulations of serum within the pelvis, due to tuberculosis or constitutional conditions can be readily told by noting the general condition of the patient, as she will have the appearance of having suffered some considerable time.

Fibroids of the uterus are readily made out by their being a part of the uterus. The subserous can be felt on the outside of the uterus and no increase of flow is present, as a rule, and if nourished through adhesions to the surrounding tissue, as they sometimes are, they grow very rapidly and are apt to cause severe pain. This pain comes more from tension rather than from pressure, in the earlier stages of the growth. The interstitial fibroids conform more to the shape of the uterus. They grow slowly and usually before very long cause an increase in the flow, this usually manifests itself first by increased quantity during the menses, gradually lasting a longer period of time. Indeed these cases frequently come on so gradually that the patient may become very anemic before she or the doctor is hardly aware of the presence of so serious a condition. The uterus is often shortened, but not softened. Always think of the possibility of pregnancy before passing the sound. This is the form of tumor in which the venous murmur is heard synchronous with the patient's heart-beat and this is not to be found in any other growth. The submucous fibroids always increase the flow and in due time this often becomes very alarming and may be fatal. All of these cases, more especially the latter variety, are liable to infection and to sarcomatous degeneration, and in either case the growth is very rapid. Dr. Noble, in a recent article, claims that thirty-four per cent. of the fibroids undergo these forms of degeneration and are then beyond the point of cure, while if operated upon in time the fatality is less than two per cent.—certainly a strong point in favor of early diagnosis and early operation. Fibroids of the broad ligament springing from the cervix are very serious indeed. They can readily be located and diagnosed, as a rule, and having an abundant blood supply and rapid growth and being located in a dangerous zone of the uterus or parturient canal cause complete obstruction during labor, if they are of any considerable size. This latter fact is why this is called the dangerous zone.

It is very essential that the retroflexed gravid uterus be made out early and be lifted out of the pelvis, before it becomes incarcerated. The pregnant uterus can be differentiated from a

fibroid by the absence of the fundus in its normal position, as well as by the usual signs of pregnancy, and especially can a positive diagnosis be made by what is known as Hegar's sign, or obliteration of the cervix, in cases of pregnancy. This obliteration occurs from above downward and the obliterated portion of the cervix is very soft, so that by pressure in front and back of the uterus the cervix will be found to be very soft and very thin. This is not true of fibroid or any other condition than pregnancy.

The normal gravid uterus can be told from hydaitiform mole by the very rapid growth, by the consistency, and by the characteristic discharge of the latter. Very frequently the condition of the mother's health will enable the practitioner to make a positive diagnosis. Pelvic abscess can be diagnosed by the characteristic symptoms of pus formation and the resulting adhesions fixing the parts as well as by the fever and tenderness and later the consistency of the mass.

The most important condition to be met with is ectopic gestation. This is important because of the enormous fatality which results, if it is allowed to run its course, and the almost universal cure, if treated properly in the early stage. In cases overlooked the death comes with almost no warning, which causes a profound shock to the friends and very often indeed a severe censure of the attending physician. By keeping in mind a few of the pathognomonic signs and a few of the typical symptoms, this serious complication can be made out in time to save the patient by surgical measures. During the first four to six weeks there are the usual signs of pregnancy. From the sixth to the eighth week, in rare cases a little earlier, there are the characteristic pains which are sharp and shooting in character, more severe in one groin than the other. At this time there is generally a bloody discharge from the uterus. This may even be shreddy, leading the practitioner to suspect a miscarriage, but in reality these shreds are but the decidua of ectopic gestation. With the finger in the vagina, the softened cervix will be noted. Os is slightly patulous, and the mass can be located in one or the other tube, but the tube is very frequently located in the Douglas cul-de-sac. If in doubt, put the patient under an anesthetic and with the os held by volsellum, and with two fingers in the rectum, you can form a definite idea of the condition of the tubes and of their relation with the uterus. At this time, the sixth or eighth week of gestation, and before rupture has occurred, you will note not only the characteristic shape and "feel" of the tube, but you will note also the marked pulsation in this tube which is not present in any other possible condition. Now is the time to operate. The sooner the better and always by celiotomy, never through the cul-de-sac. If for any reason, the case is not diagnosed at this time—and as a matter of fact, it is not

often made out at this time—soon a new set of symptoms of very grave import will manifest themselves. Such, for instance, as increased, paroxysmal pain of a colicky, crampy, cutting character, and at any time before the twelfth week rupture may occur. This event is not likely to be overlooked by any wideawake physician. Its sudden onset accompanied by terrific pains and severe shock and often very profound collapse, make a picture easily told but never to be desired. If once seen and recognized the same attendant is not liable to be caught napping a second time in one of these cases. To be sure the patient may die, and no one even suspect the real trouble. If the patient rallies from this attack another is liable to occur at any time, so, even if the patient does rally, after one of these attacks it is best to operate rather than wait for another attack which is almost sure to come, and each attack will almost invariably be worse than its predecessor. It is not possible for me to go into even the merest outline upon this important subject, but simply drop these hints.

I need add but a few words. The first twenty years of my professional life were spent in the work of the so-called general practitioner, to which was added, during the last ten of those years a fair amount of surgery. Therefore, I may justly claim to be able to look at the pelvic troubles above mentioned through the eyes of a general practitioner rather than those of a specialist. To be sure, my work for the last few years has necessarily been of such a nature as to bring me more closely in contact with these conditions. Bearing in mind the facts, as they appear before me in my clinic at the University of Michigan, and as I meet them in my own practice and in consultation with other doctors, I feel safe in saying that a large per cent. of the cases would be much better off if sent to, or seen and operated upon by the surgeon much earlier than they are. This is by no means universally true, for many practitioners there are who very promptly note these abnormal changes and equally as promptly call in the proper aid or send them to the proper place for treatment.

It has been my custom for many years, in season and out of season, to reiterate the following observation, when in the presence of doctors. It is my firm conviction that no doctor can do the best possible work for his patient under all conditions and circumstances unless he has first been a general practitioner. It is only by such training and experience that he will be able to see the interdependence of one disease or one condition upon another. In other words, be able to take cognizance of the so-called reflexes, and until he can do this he will not be able to solve many mysteries and cure many obscure cases. It is extremely unfortunate that the patient rather than the doctor is the victim of such one-sided education.

REPORT OF A CASE OF AN ANENCEPHALIC
MONSTER.

BY FLORENCE N. WARD, M. D.

The patient, Miss G., unmarried, aged thirty, American, was brought to me by her physician on May 10, 1905, for an operation for a supposed abdominal tumor. On examination a pregnancy of six months was discovered. Her history is as follows: Family history negative; menstrual history, puberty fourteen years, menses irregular in frequency, occurring every three weeks; flow painless and free, lasting from two to four days. Last period Nov. 11, 1904. Patient was anemic and complained of great weakness and irritability of the stomach.

The ante-partum examinations and record of labor as conducted by my assistant, Dr. Hatton, is as follows:

On June 17, 1905, distention abnormally great for a six months' pregnancy. Slight edema of the lower extremities.

Inspection.—Great uniform distention of abdomen. Fetal movement most marked in upper uterine zone.

Palpation.—Position of fetus transverse, riding well up in fundus. Could not differentiate between head and breech.

Auscultation.—Uterine souffle was heard distinctly over all parts of the organ, but fetal heart sounds were not detected at any point despite a careful examination.

Internal examination revealed a soft patulous cervix, placed rather high in the pelvis, and small parts distinctly felt in the lower uterine zone, the movements there being felt at the same time that movements above were observed. Measurements of the pelvis were normal.—Intercristal 26 cm.. Interspinal 24 cm., with an external conjugate of 18 cm. Distance from fundus to umbilicus 15 cm.; to ensiform 6 cm.

On June 24, 1905, a second examination was made to clear up, if possible, the uncertain points. The only changes found were much greater distention, and a cervix very soft and dilated to about the size of a quarter. The movements of small parts were still to be felt in the two opposite localities, and this with the very great distention gave suspicion of there being two fetuses present, but the inability to obtain fetal heart sounds at any point left the question still open.

Labor set in at 11 P. M., June 24. Patient showed signs of great weakness, pulse 90 and feeble. Inability to retain nourishment. Pains came regularly occurring every five minutes. At 8.30 A. M. the cervix was dilated to about the size of three fingers and an extremity, together with a soft mass of an indefinite outline presented. Membranes were intact. Maternal pulse 108. Fetal heart sounds could not be heard.

At 3 P. M. the cervix was found dilated to 3 1-2 fingers. Face presentation with little descent; membranes intact. At 5.10 P. M. membranes still intact, well advanced through a cervix dilated to about 4 1-2 fingers. Membranes artificially ruptured during a pain. Amniotic fluid shot to the foot of the bed, and continued to pour as from a faucet until the whole bed was flooded. A gallon is a small estimation of the fluid that escaped. The patient immediately felt the relief from pressure. Then for the first time fetal heart sounds were heard in the median line below the umbilicus and examination revealed the real condition. A face presenting with all the landmarks well defined, except that posterior to the anterior ear, a hard unusual prominence was found; beyond the brow to the left was a soft mass almost resembling placental tissue. Then the diagnosis of a monstrosity was made. The head slowly descended until at 6.05 it was on the perineum, the brow presenting with the soft area in place of occiput anteriorly.

The delivery was very gradual, first the brow, nose, and mouth appeared, then the tumor where the occiput should have been, with the left hand. The head when delivered showed that the real condition was that of an anencephalic monster. The shoulders were delivered very slowly by careful guiding in a transverse position, no attempt being made to alter the mechanism, it being deemed wisest to let nature follow her own course since there might follow other deformities. The body was delivered at 6.30 and found perfect below the shoulders. There was no effort at respirating. The pulsating cord was immediately clamped but not cut and the placenta delivered. Very free bleeding from the uterus occurred, but normal contraction was soon stimulated by kneading.

The weight of the whole specimen, fetus and the small placenta, was five pounds. The placenta was complete but it had degenerated in large areas. The cord was normal.

Points cleared up after delivery. The reason for the differentiation between head and breech being impossible was because of the entire departure from normal in the contour of the fetus and the absence of any mobility of the head on the trunk, giving the impression of a continuation of the dorsum just



Fig. 1.—An anencephalic monster delivered at 7½ months (approximately).
Weight of full specimen, 5 lbs.

the same as breech. The finding of fetal extremities at opposite poles of the uterus probably was in part to be accounted for by the unusual length of the lower extremities. The great distention and the inability to detect fetal heart sounds was due to the extreme degree of hydramnios existing.

Description of child.—The body was not only well formed but well nourished, the only departure from normal being in the extremities which were unusually long. The head presented

a ghastly appearance, the face being almost the top of the head. The orbital prominences were marked, the eyes bulging, nose and mouth normal but no chin, since the head seemed a direct continuation of the body with no neck intervening. Posteriorly the skull was absent, the cephalic cleft being continuous with the spinal cleft down into the dorsal region. Large bony prominences were found just posterior to the ear on



Fig. 2.

each side. The bones that were present in the head were ossified completely.

This specimen calls our attention to the general field of monstrosities. Owing to their weird and many times repulsive character, they hold a peculiar position in human pathology. Unfortunately, owing to esoteric processes, comparatively little is known of fetal pathology. From the moment of conception

to the hour of birth, the life of the embryo and fetus is imperiled.

It is exposed first of all to the possibility of the development of its inherited defects from either parent; secondly, from the interference of its own development of the fetal investments; and lastly, diseased condition of its autosite, the mother, may be reflected disastrously upon it. Thus an inflammatory condition of the decidua or a profound mental impression upon the mother during pregnancy may so pervert a normal development as to produce a fetal teratism. And the wonder, considering the precarious existence the embryo and fetus passes through *in utero*, is, not that monstrosities do occur, but that they are met with so comparatively infrequently.

Puesch found that out of 100,000 births, there were 454 simple malformations, 61 single monstrosities and 2 double monstrosities. He also noted that they were more frequent in illegitimate births than in legitimate, which would at least suggest some relationship with unfortunate maternal impressions.

In considering the teratogeny, there is no doubt that the majority of monsters must originate during the embryonal epoch, that period of intra-uterine life usually considered from the beginning of pregnancy to the twelfth week. This is the period of organogenesis, or that epoch in which the future organs of the body are rapidly differentiated from the primoidal embryonal tissue. At the end of this period they have attained almost complete differentiation.

During the remaining intra-uterine existence, or the fetal period, there is little more than an increase of the child in size, just as in extra-uterine life. A few true deformities may occur, however, during the fetal period,—these are most apt to occur in structures, such as bones, teeth, genitals and in which complete development is delayed even through many years of individual existence.

Etiology.—The exact causative factors producing monstrosities are unknown. It is possible that certain conditions such as profound maternal disturbances, as grief, anxiety, fear, play a prominent part; also attempts at abortion or any mechanical condition that will produce partial detachment of the ovum from the decidua; germ infection resulting in any inflammatory condition of the fetus or appendages, and lastly syphilis.

It is not without interest to glance over the different varieties of monstrosities and note the gradations and degrees of malformations from some slight variation from normal in a single structure to the amorphous monster which possesses neither head nor extremities.

The best classification of teratology is that which includes four groups. Their chief practical value is the relation they bear dystocia. Single monsters are divided into:

(I) Heterotaxy.

(II) Hermaphroditism.

(III) Hemiterata.

(IV) Teratism or true monsters.

(I) Under heterotaxy are included curious cases of splanchnic displacements, reversal of the natural position of organs, as where there is an anomalous position of the lungs, the heart, or the liver.

(III) Under hemiterata, which means half monster, i. e., an approach to a monster, are included all those numerous abnormalities, of volume, size, form, structure, which do not in any way gravely modify the existence of the creature or interfere with the functions of life. Under this heading are included cleft palate, spina bifida, supernumerary digits, double or bicornate uterus, congenital dislocation of the hip, polymastia, etc.

(IV) Under teratisms are placed essential monsters or major monstrosities. There are several varieties:

(a) Teratomelus or limb monstrosities, where limbs are deformed to such a degree that the patient is rendered helpless thereby.

(b) Teratocornus or trunk monstrosity.

(c) Teratoprosopus, face monstrosity, presenting all varieties of facial abnormal development, and

(d) Teratocephalus, or brain monstrosity. This abnormality really affects the cerebro-spinal bony axis, the malformation of the brain being largely secondary. There are several degrees of malformation of this type. The mildest is iniencephalus, where there is an occipital fissure of the cranium extending into the spine, with a certain amount of hernia of the encephalon. A much higher degree is an exencephalus in which the defect is so extensive that the entire brain escapes from the back of the fissure and rests upon the back. In the very highest degree the cranial vault and brain are both absent, anencephalus, absence of encephalon. This is the most common of all single monsters.

Abnormalities.—Coexisting with monstrosities, other abnormalities are frequently noted, for instance, hydramnios as encountered in this case. Frequently also in these cases there is premature delivery, labor usually taking place about the seventh month, a most fortunate termination before the fetus has attained full growth.

Treatment.—Labor with monstrosities is apt to be delayed, owing to the poor wedge that the head presents at the cervix and the imperfect mechanism attending its passage through the pelvis. Should progress be so slow as to jeopardize the condition of the mother, version is then the best course to pursue. In case impaction has occurred, then in the interest of the mother, some of the mutilating operations must be performed.

REMARKS ON POTTS' FRACTURE.

BY LEONARD W. ELY, M. D.

It may be said of many fractures that an exact diagnosis is not absolutely necessary, and that the method of treatment is largely a matter of indifference—the ends of the fractured bone lie more or less in apposition, and, if we fix the limb by some favorite form of splint, nature will give us a good result. With a Potts' fracture this is distinctly not the case. If we put the foot up in the position in which we find it, we shall almost invariably get a bad result. In spite of all that has been written on this subject, the principles of treatment do not seem to be properly understood, or, if understood, are not followed out with sufficient energy.

The following observations are based on cases seen in private practice and at the Roosevelt Hospital Dispensary, and may be of assistance to some whose work does not bring them into frequent contact with this injury. If the treatment laid down be followed in every case, the great majority of patients will recover with a good foot. It should be borne in mind that a bad result will seriously damage the patient's earning capacity all the rest of his life.

In order to avoid misunderstanding it is well to note that we take Potts' fracture to mean a fracture of the lower end of the fibula, with a tearing of the internal lateral ligament of the ankle or, if the ligament holds, with a fracture of the internal malleolus.

The cause of the fracture is abduction or eversion of the foot. In one of our cases the foot was fixed, and the force was applied on the outside of the leg, but this is practically the same mechanism. A fall from a height on the foot fractures the tarsus, a twist inward usually sprains the ankle.

There is an old idea, widely disseminated among the laity, that a sprained ankle is often worse than a fracture. This is of course not so. Probably the idea owes its origin to the fact that fractures of the tibia, fibula, calcaneum, and astragalus were mistaken for sprains, and were treated as such. Many patients come to the dispensary with a history of an old sprain, whose legs or feet show signs of callus formation.

The diagnosis between Potts' fracture and sprain, without the aid of an X-ray machine, is often a difficult matter. It is a good rule to regard every case as one of fracture until a fracture can be positively excluded. Another good rule is to remove the shoes and stockings from both feet before beginning the examination.

In a sprain the greatest tenderness is at the tip of the external malleolus or just below it over the external lateral ligament of the ankle; in a fracture it is anywhere from a half inch to two inches above the lower end of the fibula. We ask the patient to point with one finger to the most sensitive spot, and we find this spot also by pressure with our own finger. We then press the tibia and fibula together well up the leg. This maneuver, in a fracture will cause pain at the seat of injury, but no pain in a sprain. It is sometimes possible to detect irregularity of the fibula in a Potts' fracture, but rarely crepitus. In a typical Potts' fracture widening of the mortise at the ankle will be present, but the swelling about the joint will often mask this symptom.

In looking for false mobility we shall usually be more successful if we use great gentleness. As a rule it is not necessary to cause much pain. One hand grasps the foot and moves it about in various directions, while the fingers or thumb of the other hand rest on the external malleolus. Then, with the leg resting on our knee, we put our thumbs on the malleolus, and press first with one and then with the other, trying for a tilting of the lower fragment of a supposed fracture. It is well, in performing this manipulation, to follow Stimson's advice and have a fold of the skin between the thumbs, that the motion of the tightly drawn skin may not feign motion of a bone fragment.

In Potts' fracture pain and swelling will be present about the internal malleolus, and perhaps a false point of motion at the lower end of the tibia. In sprain these symptoms will be absent.

For the treatment the best form of splint is plaster-of-Paris, reaching from a point just below the head of the fibula to the ends of the toes. An anesthetic is rarely necessary.

First pad the foot well with cotton batting, especially about the toes and the ankles; run a strip of padding also up the

shin, then apply a gauze bandage. Let us say that we are dealing with a fracture of the left leg. The patient grasps the ends of a muslin bandage whose loop passes under the foot at the level of the heads of the metatarsals. He is then instructed to pull hard, and from time to time, while the dressing is being applied, he is encouraged to keep on pulling and to pull hard, so that the sole of the foot is pulled up to a right angle with the leg or even beyond a right angle, if possible. Then he is told to pull still harder with his right hand, so that the sole of the foot will be turned inward. We then apply the plaster bandages smoothly, re-enforcing the splint by passing the bandage repeatedly up and down posteriorly, from the top to the tips of the toes, so as to avoid having a mass of useless plaster in the bend of the ankle. Besides this we re-enforce the sole again. Over the front of the leg and over the dorsum of the foot the plaster should be thin. The bandages are applied quickly. While they are setting we take the foot in our left hand and add our strength to that of the patient to push it into extreme dorsal flexion, at the same time grasping his heel with our right hand and strongly adducting it. When the plaster has set, we trim it so that the ends of the toes can be seen. If the fracture is a fresh one we then immediately slit the dressing from top to bottom, and with our bandage scissors divide every turn of the gauze bandage under it. This should never be neglected, even if we think that the patient will be under close observation. The slit-up plaster may then be encircled with a few turns of a gauze bandage. The circulation must be carefully watched. We instruct our patients at the dispensary, if their toes turn blue or become cold, to return immediately to the hospital or to call a doctor. With a fracture that is four or five days old we do not slit up the plaster, but we give the same rigid instructions to the patient.

If the plaster has been well applied it should last for four or five weeks; toward the end of this time the patient uses his foot to walk, covering the plaster with an overshoe. When we remove the splint we strap the ankle as for flat foot.

The question often occurs to one who puts up a Potts' fracture for the first time, how far the foot should be twisted in. It should be twisted in as far as possible.

PUERPERAL ECLAMPSIA, ITS PROPHYLAXIS.

BY J. A. FERREE, M. D.

"Puerperal eclampsia is an acute derangement which may occur in the pregnant, parturient, or puerperal woman; characterized by clonic convulsions with loss of consciousness and coma."

Of all the complications in obstetrics, puerperal eclampsia is considered to be the one of import. The united efforts of the clinician and the laboratory expert have not as yet unmasked the cause sufficiently to make its curative treatment tenable. It is not enough to say that it is caused by a toxine circulating in the blood, affecting the kidneys, liver, brain, and nerve centers together or separately (particularly the kidneys); the varying and inconstant pathological changes of these organs are not severe enough, as revealed by autopsies, to indicate them to be the characteristic lesions of the disease. Then for the want of better data, we must be contented by saying that its probable cause is some unknown toxine circulating in the blood affecting the nerve centers.

If this be true—if the cause is still shrouded with mystery—one cannot speak of a rational method of cure; but can hope for more through its prophylaxis. Sure it is, "That an ounce of prevention is worth a pound of cure." Hence the following.

In all obstetrical cases, particularly the primipara, it is the duty of the obstetrician—as soon as engaged—to make due inquiry and examination of the expectant mother. I take the term examination to mean a most rigid one; family and personal history, physical examination of the patient, chemical and microscopical examination of the urine, repeatedly during the pregnant period.

The signs and symptoms of the pre-eclamptic state are too well fixed in the minds of every obstetrician to waste time in their enumeration. Suffice it to say that it is one of toxemia and that the prophylactic treatment is best carried out under the following: First, regulate the diet so as to diminish to a minimum nitrogenous food; second, improve the action of all the eliminative processes, namely by encouraging thorough action of the bowels, kidneys, liver, skin, and lungs; third, com-

plete physical and mental rest with vigilant attention to the details of hygienic care; fourth, if there is not prompt improvement, empty the uterus by a conservative method.

In regard to the first, it is better to start with a rigid milk diet, than with a more liberal one and then later to be compelled to reduce it. The milk should be given in definite amounts at stated intervals. This is conceded to be the very corner stone of success at this stage. In order to avoid tiring the patient with plain milk, peptonized milk, buttermilk, koumiss, matzoon, or kefir may be allowed.

If improvement follows the use of this diet, a gradual return to a diet consisting of fish and white meats in moderation; fresh fruits, vegetables, and stale bread may be allowed. An abundance of water must be given. Either some light table water, mildly diuretic mineral water, may be administered as regularly as medicine. This consumption of water is not left to the patient's fancy but under the surveillance of the obstetrician.

As to the matter of elimination, much care should be taken to relieve the rectum by soapsuds enema, as very often a history of obstinate constipation is revealed. After emptying the rectum, it is advisable to employ high colonic irrigations of warm salt solutions. Salines, judiciously used, are not contraindicated as a means of flushing the intestinal and urinary tracts. Kidney action is effectually encouraged by liberal quantities of water. Some authors advise enteroclysis even at this stage for its beneficial effects on the kidneys. As a rule it is best to avoid strong diuretics, for in grave kidney lesions harm may be done. As a useful therapeutic remedy *mercurius cor.* is probably as near a specific as any single drug can be, since its pathogenesis is so plainly shown on the kidneys.

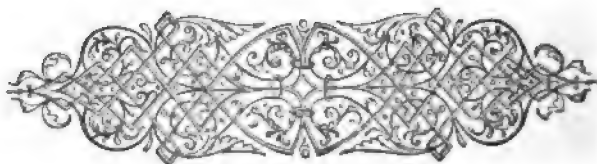
Then attention should be given to arouse the eliminative action of the skin, which is best accomplished by means of the daily hot bath, or if that is not sufficient by the hot pack or hot air bath. The hot bath is more grateful to the patient and not so depressing. The warm bath should be taken by the patient daily during the entire period of gestation as a hygienic measure. During the last few weeks the sponge bath should be employed for fear of introducing virulent micro-organisms into the vagina, which might survive long enough to involve the os so soon to dilate.

Rest in bed in a well-ventilated room or if possible in the open air greatly reduces the demand for nitrogenous food, and it is far more rational to limit the demand for nitrogenous food, than to allow exercise that increases and then cut down the diet. It should be added here that everything should be excluded that tends to disturb the equanimity of the patient. Cheerfulness in abundance is essential. Violent stimuli of every kind constitute a definite factor in precipitating a convulsion.

Attention should be given to the clothing. No contracting bands about the waist after the patient is allowed to be up; when all symptoms have disappeared, the clothing should be suspended from the shoulders and nothing worn to impede free circulation.

Very moderate exercise or massage may be employed during the improved condition, but the serious danger of over exertion must be borne in mind. The treatment of these cases is a matter of clinical tact and requires the closest attention.

Some cases will recover after mild treatment, while others in spite of all measures either fail to show improvement or grow rapidly worse. If this latter condition supervenes there is only one more resort, namely, empty the uterus. This has its opponents because of the danger of sepsis and exciting convulsions reflexly. But the burden of authority seems to be in favor of emptying the uterus under the most rigid asepsis.



OCCIPITO POSTERIOR.

BY JAMES R. PURDY, M. D.

Occipito posterior is the most common and most important abnormality in vertex presentations; 70 per cent. of vertex presentations are normal, that is to say, occiput is anterior; 30 per cent. are abnormal, occiput is posterior. In about 2 per cent. rotation does not take place, and these cases are the most difficult of all the presentations. Most text-books lay stress on occipito posterior at the brim, whereas in practice the difficult cases are those where the head being descended in a state of incomplete flexion and pressing on the pelvic floor, the occiput does not rotate forwards. Generally speaking, whatever part of fetus lies lowest when it reaches pelvic floor it rotates in front, so that many occipito posterior presentations as soon as pelvic floor is reached commence to rotate in front, and the labor after some delay is finished in the normal position. In rare cases an anterior presentation may rotate and become posterior. Unfortunately a certain number do not rotate forwards, but extension becomes complete, and then grave trouble ensues. In all cases of occipito posterior there is delay; opinions differ as to whether delay is in stage of dilatation or expulsion. Practically this is of little moment; the important point to grasp is that there is always delay, that the position means probable rupture of perineum in multiparæ, and almost certain rupture in primiparæ. There is increased danger to the mother owing to damage of soft parts of pelvis and perineum of septic infection, and this may be increased by the greater amount of manipulation of the genital tract; there is also danger from exhaustion. The delay in text-books is stated as being two to three and one-half hours in primiparæ; one to one and one-half hours in multiparæ.

The diagnosis of occipito posterior positions is often very difficult; the fontanelles are the guide. In occipito posterior presentations the classical positions are third position of Nægele R. O. P., O. D. P., and fourth position of Nægele L. O. P. The third position is the reverse of the first position; the occiput points to right sacro-iliac synchondrosis, forehead to left foramen ovale, the diameter is right oblique. The examin-

ing finger impinges on left parietal bone; the posterior fontanelle is behind, the anterior fontanelle in front. The fourth position is the reverse of the second. The occiput points to left sacro-iliac synchondrosis; the finger impinges on right parietal bone. I do not, however, think very much importance need be attached to classical positions; the one important thing to define is whether the occiput is posterior or anterior. Such being the case, and the fact that the presentation is occipito posterior, what is the best method of treatment? It is fairly well agreed that in a multipara when head is not through brim, os is dilated and labor has had time to terminate, that version is the best treatment. In a primipara version is dangerous practice, ending almost invariably in death of the child. Consequently external rotation or combined external and internal rotation should be tried in such cases. It is, however, very difficult to be sure of anything as high up as the presentation is, and therefore probably the best treatment is to apply forceps and pull. Fortunately such cases as these are very rarely met with, and when they do occur it is generally due to a flat pelvis or a hydrocephalic head, and therefore it becomes a question as to whether craniotomy would not be best treatment.

With regard to occipito posterior cases, when head is through the brim, what treatment should be adopted? Hermann puts it tersely thus: To pull, to flex, to rotate. Barnes says pull is best; Hermann says flex is best. There is one other way that must not be forgotten, and that is to turn, so that it ought to be put thus: To pull, to flex, to rotate, to turn. Now all these ways, in my opinion have their merits; no one of them is suitable to all cases. Each case stands alone and must be treated according to the judgment of the accoucheur, e. g., in a multipara with a well dilated os and plenty of room in the pelvis, version is perhaps easiest and safest method of procedure. Version, however, should not be performed in primiparæ save under very exceptional circumstances. If patient is seen early and all things are favorable, postural treatment might be tried. The author of the article on occipito posterior in the American text-book, latest edition, says: "Try postural treatment as long as membranes are unruptured; should this fail no treatment is necessary until after rupture of the membranes; but both before and after rupture frequent examinations are to be used in

order to detect early any tendency to extension. If extension becomes extreme, wait one hour, then abandon expectant and resort to operative treatment. Try postural method, introduce two fingers and raise the forehead. Should extension recur, etherize patient, introduce hand, and dilate manually to a degree sufficient to permit passage of half hand, then press forehead up until complete flexion is secured and head freed from brim. Remove ether, and if extension becomes re-established operate by turning, by rotating manually and applying forceps to anterior occiput, or apply to posterior occiput without rotating. There is difficulty in rotating and applying forceps when head is freely movable above the brim, but the operation is less dangerous than the extraction of after coming head, therefore this operation should be chosen by those skilled in use of forceps, but version should be performed by those of small experience. If forceps are used as soon as small fontanelle has been brought to center of pelvic cavity, the forceps should be removed and the rest left to nature unless condition of patient necessitates immediate delivery. Rotation by forceps is extremely difficult and only to be attempted by experienced operators, although active rotation is not permitted; it is always proper that prevention of rotation should be avoided. In persistent occipito-posterior positions, first duty is to establish extreme flexion by pressure on the forehead, then nature will maintain it if uterus is powerful enough to effect an unaided delivery. During a long second stage the attendant should be patient and loath to interfere. The use of forceps is not warranted unless the exhaustion of one or the other patient is clearly present and increasing, and progress has ceased. If forceps are used, simple traction should be used, i. e., no endeavor should be made to rotate with forceps. Traction should be made downwards or horizontally until the forehead emerges sufficiently for root of nose to point beneath the pubic arch; the handles are then raised until occiput rolls out over the perineum, and they are finally depressed to deliver face and chin beneath the pubes."

I have quoted the above article because it is by far the fullest on occipito posterior I have found in any book, and because it represents some striving after a clear picture of the many difficulties met with and how to obviate them. It distinctly,

however, belongs to what I term the half-way school. The fear of early interference is there.

To criticise in detail:—Frequent examinations are recommended; most of us agree frequent examinations are to be avoided. It is recommended to etherize patient, to dilate manually to a partial degree, and then to attempt to procure flexion, then to remove ether. Few of our patients would submit to this; once anesthesia is produced it is bad practice to allow patient to come out of it until labor has terminated. Opinions may differ about manual dilatation, but surely there can be no two opinions that if dilatation is practiced sufficient to admit the half hand the easy dilatation to pull should be at once proceeded with. Forceps above the brim should be applied by those skillful in their use in preference to version—who are skillful in the use of forceps above the brim?—skill surely comes from experience. Caces above the brim even in large midwifery practices are few, and the necessary skill cannot be acquired by practice. There is, however, not so much difficulty in applying forceps above the brim, as all the text-books state; the difficulty is not in their application but in getting them to stay on when once applied, as they are very liable to slip in high operations. The removal of forceps when head gets into midcavity is bad practice; most certainly they should not be removed until head is on perineum, and I am strongly of opinion they should not be removed then, but that labor should be completed by the forceps. To wait until exhaustion sets in before forceps is applied is wrong; exhaustion should be avoided whenever possible. The directions for use of forceps are good, but one important point is missed: the forceps used should not be axis-traction but ordinary ones, and for this reason the head should be allowed to rotate if it will, so forceps should not be locked together and fixed, but after each tractive effort the blades should be disengaged from each other, i. e., of course, when head is low down. If the head is engaged in the pelvis I usually prefer to use forceps; the liq. amnii has generally escaped, and so version is often a matter of greater difficulty than the application of the forceps. If the head is on perineum, as it usually is when first seen, or at any rate when diagnosis is certain, I would manually rotate; this is not a difficult proceeding; it is perfectly easy in most cases to

rotate the occipito from posterior to anterior; it, is astonishing how little manipulation is needed to turn an occipito posterior into an occipito anterior.

Deterred by reading about the difficulties of rotation, I had only practiced it in very difficult cases when other methods seemed hopeless, but a few months ago, when I was ill, I had the kind help of Dr. Harding in a very difficult occipito posterior, and he adopted this plan, and in discussing the subject with him he told me he always practiced it, and with success. I have used it often since then, and have found it easy and safe; no harm has resulted either to mother or child. The only difficulty is that head will not stay where you put it; you must apply one blade of forceps to hold head in position before you withdraw the hand.

There are different methods of rotating. The one I have adopted is to pass the hand into vagina, raise head gently until whole surface of the hand can be applied to the forehead, the fingers lying over the face of the child; then the hand and forearm should be rotated with the head until the occiput is well anterior to, and, if possible, to the left of the median line. With this method of rotation if it is not desirable to immediately deliver you can get hold of shoulder with fingers and rotate body with the head, and then the occiput will stay where it is put. Whatever method of rotation may be adopted it will be found that the procedure is simple and can be accomplished with perfect safety to mother and child, and that by this means a very difficult occipito posterior can be made into an occipito anterior, and labor speedily terminated.



OBSCURE LACERATIONS OF THE CERVIX AND
UTERUS.

BY ELIZABETH HAMILTON-MUNCIE, M. D.

It has been said by one of large experience that "The five fingers of the pudic nerve carry more messages of distress than all other nerves combined." Recognition of this fact necessitates thorough and painstaking attention to details if the gynecological surgeon would cure his long-suffering patients and save others from relapsing into chronic invalidism.

The object of this paper is to call attention to obscure lacerations of the cervix uteri. This seldom recognized condition is often the starting point locally, of grave pathological changes and remotely, of serious neuroses and functional disturbances, which functional disturbances, if long-continued, will cause organic changes.

When repairing a lacerated cervix the surgeon is face to face with the problem, not simply of "sewing a rent," but of curing the patient, and therefore it becomes his duty to discover and eradicate, so far as possible, everything that can keep his patient sick. The uterus should be thoroughly explored, as should also its appendages, surrounding tissues and sympathizing pelvic organs, which receive the same nerve supply. The five fingers of the pudic nerve (of cerebro-spinal origin), with the abundant supply from the hypogastric plexes (of sympathetic origin), are as one family in which if one member suffers, all suffer with it.

Lacerations of the cervix and uterus may be divided into two general classes, which the writer has been pleased to designate as Visible and Obscure. The former has been recognized for many years and includes the gaping tears of the vaginal portion of the cervix, which may be lateral, anterior, posterior, or stellate. Unfortunately for the patient, these lacerations are often repaired by simply denuding the surfaces of the torn tissue, removing a cicatrix from the angle and suturing, without further investigation. If the body of the uterus has also been lacerated, as is often the case, and a cicatrix has been formed at or above the os internum, the patient will not be permanently benefited by this partial surgical interference. On the contrary, her former suffering may be in-

creased and no relief found until the remaining scar tissue is removed. To the young surgeon these are very trying cases and may be classed as obscure lacerations, co-existent with the visible tears.

It is the opinion of Dr. Lee, of Rochester, that the development of multiple fibroma may be traced from zones of scar tissue within the uterine walls. Furthermore it has long been recognized that a cicatrix is favorable soil for degenerative changes, especially of a malignant character.

The obscure lacerations are of two kinds:

A. Lacerations of the cervical or uterine tissue, which are partly or completely closed by hard cicatrix. These are the more common of the two and usually can be diagnosed just preceding, during, or after menstruation, when to the examining finger or uterine sound, the cicatrix will feel harder than the surrounding cervical tissue and, if it extends to the ostium externum, will pouch beyond the normal cervical tissue.

B. Lacerations which remain as slits through the uterine or cervical muscular walls, but have not penetrated the peritoneal covering, if of the uterine body, and not penetrated the vaginal covering, if of the cervix. These usually occur between the fundus and the second segment of the cervix and can be detected after careful dilatation with graded sounds, when, if the little finger be placed in the cervical canal a slit may be felt extending entirely or partially through the muscular wall, the vaginal mucous membrane of the cervix remaining unimpaired. If the tear extends above the internal os, it may have severed the entire uterine tissue, leaving only its peritoneal coat or broad ligament as a partition between the uterine and pelvic cavities. Sometimes a large, hard cicatrix is found, extending into the broad ligament, making a combination of class A and class B lacerations.

These tears often start above a large, visible laceration or may run parallel with it. They may extend to the fundus, so that the uterine sound may readily pass under the uterine peritoneal covering or between the folds of the broad ligament. This condition is rare, but a serious matter when existing, and undoubtedly explains the accident (as occasionally reported with multiparæ), of the escape of the fetus into the abdominal cavity during the second stage of labor and, I believe, also accounts for certain cases of septic fever following childbirth;

for if such a tear occurs and fails to make immediate union a septicemia must result.

In one case where trachelorrhaphy was performed a portion of the uterine artery was found entirely exposed, the uterine muscular tissue having been completely torn away from it. This patient had had an attack of puerperal fever eight years before. Ever since she had suffered from severe headaches and for some time had experienced hallucinations of a character which made her fear she would take the life of her child. She presented no local pelvic symptoms. However, repair of the lacerated cervical tissue has resulted in a recovery and for eleven years there has been no return of the former headaches or hallucinations.

The surgical technique in the repairing of these obscure lacerations is given in a former paper. The "combination stitch" is necessary, for which a special fish-hook needle is made.

Considering the insidious and deceptive character of the obscure lacerations, it is easy to account for the fact that in certain quarters trachelorrhaphy has fallen into disrepute. Unsatisfactory results will ever follow these operations until there is a general recognition, not only of obscure lacerations, but also of the importance of removing every pathological condition from the pelvic outlets. The apparently insignificant points of irritation about the vulva and the rectum will receive due attention, if the nerve supply and function of these parts are borne in mind.

The exposed surfaces of the visible lacerations often become eroded and cause local disturbances. Leucorrhea and tenderness are the most common symptoms which call the attention of both patient and physician to the part. This is not the case with the obscure variety, for the patient is frequently congratulated upon having passed through her confinement without injury to the cervix. Later, however, certain reflex symptoms appear which had not existed before childbirth, and possibly after a few years, functional organic diseases of remote organs develop, although during this time there may have been no evidence of local pelvic symptoms. But when they do appear, there is often ovarian irritation, also scanty or painful menstruation and a dragging pain in the sacral region. Upon examination there will be found frequently a flabby and anemic

condition of the vagina, with the cervix eroded, cystic, or anemic. The uterine body will often be subinvolved and sensitive, except in cases of long standing, when to the examining finger it often will present a hard, unyielding sensation. At this stage, if the physician fails to recognize the scar tissue, a series of local treatments, ranging from three to six months, is instituted, at the end of which time, the patient is dismissed, much improved; but after a few weeks she recognizes a slight return of the old symptoms and submits to a second series of local treatment. After several years, in spite of this routine, the uterus often becomes displaced, one or both ovaries may enlarge and prolapse and respond no longer to this treatment. Later they become bound by adhesions, caused secondarily by several slight attacks of cellulitis. At this stage some good Samaritan may suspend or fix the fundus to the abdominal peritoneum (ventral fixation), at the same time loosening the adhesions and patching the offending ovary.

This procedure may be good surgery, but is not good surgical judgment. For, had the scar tissue been discovered and removed when the patient first applied for treatment or before this stage had been reached, this radical operation would have been avoided. And if performed, with all its accompanying dangers, it will not materially benefit the patient unless the scar tissue, the original cause of the trouble, be removed. As illustrative of these facts, the following cases may be cited.

Mrs. E., whose family and personal history were good, was married at the age of twenty-four. Two years later she gave birth to her first child, her labor and lying-in period being uneventful. Until this time she had been in excellent health. For the succeeding five years, however, she was obliged to spend about one-half of her time at a sanatorium in New York State. She was treated by two of the best gynecologists of this city and grew tired, as she expressed it, "of jumping over the fence and back again." So intense did her nervous symptoms become that she was unable to direct the affairs of her little home for more than three months at a time. She suffered from neuralgic pain in the head and from a sense of intense heat on the vertex which drove her "almost crazy." Her bowels were always constipated and she was never free from a tired, dragging sensation in the back and thighs. Her stomach and intestinal digestion were greatly impaired. She had dys-

menorrhœa with a scanty, dark-colored flow. For years she was treated for erosion of the cervix and prolapsed ovary. And so it was that, at the end of the first three months treatment her physician had pronounced the local condition much improved and had advised her to go to a health resort for three months, with the parting admonition, "it is the only place for such nervous women." After a few weeks' sojourn in this sanatorium her general health was much improved, so that she resumed her home duties, feeling encouraged and hopeful. Her happiness was short-lived, however, for in a few months the old trouble reappeared and the same treatment was again necessary. For five years this routine practice was followed, three months at home, three months away.

Although the history of her case was conclusive as to the true cause of the trouble, I made a careful examination of the pelvic organs. The ocular examination revealed a cervix absolutely normal, except for a slight congestion and erosion around the ostium externum. By the use of the uterine sound, however, the existence of a large, hard cicatrix was discovered on both sides of the cervical canal and the left ovary was prolapsed, congested and sensitive.

It was explained to the patient that she had been lacerated at childbirth, that scar tissue was causing the trouble and that its removal must be accomplished before she could recover her health. She left the office but returned a month later. Her husband had secured the advice of other specialists, and each in turn, according to her testimony, stated, "You need no operation, the cervix is perfectly normal." However, in spite of all advice to the contrary, she decided to have the operation. In less than three months after its performance she was relieved of all her unhappy symptoms and was taking care of her own home. Because of the irritable ovary she was watched carefully for about six months. With unhampered nervous energy and consequent normal circulation, the ovary also became healthy. She has now been in excellent health for seven years and has had no further need of medicine, doctor, or health resort.

Case II.—Mrs. B., age forty-eight, had given birth at twenty-three years of age to a large child; after which she became subject to attacks of gallstone colic and flatulent dyspepsia, with alternate diarrhea and constipation, the latter becoming chronic.

These symptoms intensified until after fifteen years a diagnosis of intestinal stricture was made and later of cancer of the liver. It was after twenty years of suffering that she arrived at our sanatorium in the following condition. For two years past her nourishment had consisted principally of a liquid diet, not exceeding three teaspoonfuls an hour. Her color was a bluish-gray, she was greatly emaciated, her mental condition was so cloudy that she could not complete a sentence and her sleep was poor. A physical examination revealed a prolapsed and dilated stomach and an anemic heart. What appeared to be the lower lobe of the liver was very hard and nodular, but so sensitive that it could not be satisfactorily outlined. The intestines were distended by gas. The uterus was atrophied and anemic, the vagina was also anemic and tense, the hood of the clitoris was adherent, the perineum had been lacerated, its mucous membrane being tense and shiny and presenting two lines of scar tissue. On the lower rectum were several large irritable papillæ and it was tense and atrophied. The sigmoid was prolapsed into the rectal pouch and was very sensitive, its local temperature being 102° , although the patient had no systemic fever.

After two months' treatment, the nodular mass in the hepatic region began to soften and proved to be fecal accumulation and not malignant tumor, as was at first suspected; we, therefore, gave a hopeful prognosis. A permanent recovery could be reasonably expected, if she would have an operation for the removal of scar tissue from the cervix, repair of perineum and the removal of papillæ and atrophied mucous membrane from the rectum. To this the patient and husband consented. At the end of three months' treatment, preceding the operation, she was still unable to take any quantity of food without intense suffering and a return of the "old side pain," which presented all the symptoms of biliary calculi. When there was no further response to general treatment, the proposed operations were performed. She reacted nicely, but suffered greatly during the two following weeks with pain in the hepatic region, which could be relieved only by raising the prolapsed sigmoid. At the expiration of two weeks a change for the better occurred and four weeks from the day of her operation she was served a regular Thanksgiving turkey dinner, eating heartily for the first time in several years. It is now some months since the

operation, she not only digests but assimilates her food. Her bowels, which before the operation could be moved by only colon flushings of oil, ox-gall or molasses, are now moving with regularity. She is conducting the affairs of her home, feeling better in every respect, and her improvement is a wonder to all who had previously known her.

These two cases are cited at length to illustrate:

1st. The dangers of scar tissue imbedded out of sight, leaving a normally appearing cervix.

2d. The power of Nature to effect a cure when relieved of nerve impingement.

3d. The inadequacy of medical treatment when surgery is indicated.



GALVANISM IN THE TREATMENT OF STENOSIS OF UTERINE CERVIX.

BY GEO. P. HALE, M. D.

Dysmenorrhea from stenosis of the os, external or internal, can be readily relieved and much comfort given the sufferer by the judicious use of the galvanic current. I have found this agent a very potent auxiliary to the simillimum in some intractable cases among virgins especially, as it is chiefly with this class of patients that we find the most suffering at each monthly cycle. My method of procedure is the same in nearly all cases, so if I recite the history of one case it will apply to all.

Miss N— had been a sufferer from dysmenorrhea for several years, the flow being scanty and suffering the pangs of parturition at each monthly menses. A Graves' virgin speculum was cautiously introduced and it revealed a virgin uterus, normal in size and color with the exception that the external os showed a very slight congestion. A sound was carefully introduced up to the internal os where it came to a halt. It was then connected to the negative pole of a galvanic battery—the positive pole being attached to a large felt pad placed under the hips—and the current turned on, cell by cell, until the meter registered ten amperes, and held there for a few minutes when the obstruction gave way, and the sound glided up to the fundus. This electrical séance lasted ten minutes, when the current was switched off, cell by cell, to zero, and the electrode withdrawn.

This treatment was given twice each week for the first month, and then once a week for the next month, then every two weeks for a month, and then just prior to the appearance of the period for the following two or three months, and the girl was cured.

In each and every case I endeavor to affiliate the homeopathic remedy with the electrical treatment and am always gratified with the result.

This method of treatment is best adapted to those cases of dysmenorrhea where the stenosis of the internal os is caused by repeated congestions and hyperplasia of the tissues at that point has taken place. The negative pole seems to dissolve the redundancy of tissue and the flow finds a more ready exit.

I find that the ordinary sound makes the best electrode for the primary treatment as it can be very readily curved to meet the condition and give me the correct position of the womb. A small hole drilled in the metal side of the handle receives the cord and makes the proper connection. This is then followed by the Goelet electrodes until the desired potency is obtained. Where the dysmenorrhea is complicated or caused by a retroversion or flexion we then have an additional proposition to contend with, and the properly placed tampon or support has to be brought into requisition, but the electricity even in these conditions is a powerful auxiliary.

If an endometritis or a menorrhagia complicates the case a pure silver tip is used on the Goelet handle and the negative current is used to dilate the os, and when it has entered the cavity of the uterus the poles are changed, the positive being attached to the intrauterine electrode and the current allowed to flow for about ten minutes—the meter showing from ten to twenty amperes—according to the toleration of the patient. It will be found that the electrode has become fastened to the lining membrane of the uterus, to loosen which the poles are again changed and after the negative has flowed through the intrauterine pole for a few minutes, the electrode can be easily withdrawn. A silver salt will be deposited upon the endometrium by this reversal of the current and a beneficial influence upon the menorrhagia is the resultant.

Much care must be exercised when using the positive pole intrauterine, not to withdraw the electrode until the negative pole has been permitted to loosen it, otherwise violence will be done the endometrium.

Electricity thus applied acts as a tonic to the genital sphere, and a vague soreness which is frequently felt in that region will be dissipated. The electrode for the indifferent pole is made of copper wire covered with felt. This can be easily made to conform to the parts, whether the sacrum or abdomen.



THE POSITION AND PRESENTATION OF THE FETUS IN UTERO, AND ABDOMINAL PALPATION.*

BY R. G. SNYDER, M. D.

Although an obstetrician requires the aid of more than one method of examination before venturing an opinion upon the position of a child *in utero*, I wish to accentuate the very great importance of every practitioner striving to become more and more proficient in abdominal palpation. It is remarkable that although the value of abdominal palpation has been recognized for nearly one hundred years, it is only quite recently that obstetrical writers have insisted upon necessity for its practice, even although many writers since the observation of Semmelweis have noticed the close connection between repeated vaginal examinations and the occurrence of septic infection.

To show that recent writers are beginning to appreciate the importance of this method of examination, I quote the following from Dr. Whitridge Williams' latest book on obstetrics: "Under ordinary circumstances external or abdominal palpation is the most reliable and valuable, and I should unhesitatingly choose it were I restricted to one single method of examination. In trained hands it enables one to make a satisfactory diagnosis without danger of infection, and with the least possible discomfort to the patient, and it is not going too far to say that its popularization forms one of the greatest advances in modern obstetrics."

Before starting our examinations we should have some idea as to the relative frequency of the different presentations. According to Shroeber's statistics, based upon several thousand cases for all periods of pregnancy, vertex presentations occur in 95, breech in 3.11, transverse in .56, and face in .6 per cent.

* Read at meeting of the Post-Graduate Society, Toronto.

We can see from this that we must always bear in mind the great preponderance of normal presentations before giving a final opinion as to the nature of the labor, but although we are comparatively safe at any confinement, in assuring the friends that everything is progressing favorably, still, unless we have made an accurate diagnosis, some day when we least expect it, we will be caught napping. This is not such a serious affair as it might seem at first sight to the city practitioner, because he can go to the 'phone and in a few minutes he can have skilled assistants to help him, but not so with the country practitioner, because he must depend upon his own resources to help him through with a bad case.

The patient should be lying in a horizontal position on a hard table or bed. The abdomen may be fully exposed or covered with a thin sheet. Care should be taken to have the bladder, and, if possible, the rectum, empty. The examiner, after carefully warming his hands, to make the tactile senses more acute, and to prevent reflex contraction of the abdominal and uterine muscles, takes up his position at the patient's right side so that he can palpate with his right hand, while his left controls the fundus. It is of the greatest importance to get the confidence of your patients, so that they will aid you as much as possible by allowing their abdominal muscles to become completely relaxed. As a clinical fact you will often find that they will give the best relaxation when asked to let their stomachs fall in. It is also important that you should use very light pressure in palpating until she becomes accustomed to the situation, because if once she becomes alarmed her muscles will immediately go on guard, and so defeat your purpose.

Let us now imagine that we have a patient ready to be examined, and I will endeavor to describe in a clinical way the various grips used, and enumerate the different points that we may expect to demonstrate as we proceed with the examination, so that we will be in a position to make a diagnosis by the process of exclusion.

I. In making an examination we seem to instinctively fall into the habit of trying to locate the back first, and as the great majority of cases are normal, we generally expect to find it on the left side. As the most prominent part of the back is opposite the umbilicus, we always start to palpate in this locality, and hence this is known as the umbilical grip.

We first place one hand on either side of the uterus. Now move them synchronously, first towards one side and then towards the other. By this means it will be found that greater resistance is offered to the hand on the side against which the back is lying. If this is not satisfactory, place one hand flat upon the abdomen so as to be over the center of the uterus. Now press directly backwards. This will have a tendency to displace the fetus to one side of the amniotic sac, and the liquor amnii to the other. The free hand can now palpate both sides of the abdomen. On one side you will feel the firm resisting back, while on the other side you get a doughy sensation due to the fluctuations of the liquor amnii. If we are still in doubt, we grasp the upper fetal pole with the left hand, and as the lower pole of the fetus is fixed against the pelvic floor, if we press downwards towards the pelvis on the upper pole, we will produce a more marked flexion of the back, so that the right hand in palpating can easily detect the difference in the resistance on the two sides of the abdomen. A fourth method has recently been described by Dr. McIlwraith, which is especially useful in difficult cases where you have used the other methods and are still in doubt. As a result of palpating the central zone of the uterus by these different methods we can determine the following five points:

1. As already described we can locate the back.
2. We can usually feel one or more small irregular prominences on the opposite side of the abdomen, and the mother will probably tell you that it is in the same part of the abdomen she feels the movements of the child's limbs. Except in twins, finding the small parts in one section of the abdomen confirms the location of the back in the other. Small parts, few and hard to find, suggest an anterior position of the child, especially if they are found at some distance from the middle line. Perhaps you may chance to feel the gentle tap of the feet against the mother's abdominal wall while you are palpating. If these movements and irregular nodules are felt near the middle line, it is pretty strong evidence that the child's back must be against the opposite side of the uterus, which means that we are dealing with an occipital posterior position.
3. In very rare cases we may find that the long axis of the child runs in a transverse direction, and then we feel either the round, hard head, or the broad, irregular breech at the side

of the uterus, but this abnormality is so evident that one can usually recognize it at a glance.

4. Having determined upon which side the back is lying, we can go one step further and determine whether the occiput is probably in an anterior or posterior position. If the area of resistance corresponding to the back is followed upwards and downwards, and is found to present a uniform curve with a broad, smooth surface, which runs off smoothly on to the head, it is probable that the child is lying in the first or second position (l. o. a. or r. o. a.), but if the area of resistance is not so broad, is inclined to be straight instead of convex from end to end, and a distinct sulcus is felt where the hand passes over the anterior shoulder and on to the head, it is probable that you are feeling the side of the fetus instead of the back, and this, of course, would mean that you have either a right or left posterior occiput position.

5. Occasionally you may be able to diagnose the presence of twins by noting that the woman has an unusually large and tense abdomen. Sometimes you can demonstrate a groove running along between the two bodies, and occasionally you can palpate two heads, etc.

II. We now proceed to make use of the fundal grip to ascertain which pole of the fetus is occupying the upper zone of the uterus. Having located the back, we follow it upwards until both hands are placed over the upper pole of the fetus, but not necessarily of the uterus, and then by pressing the palms of the hands firmly against the abdominal wall we are able to keep the body of the fetus firmly fixed between them, while at the same time we can try for ballottement of the head with the tips of the fingers. If the head is occupying the upper zone of the uterus, we will be able to toss it from one side of the uterus to the other on account of the hinge movement at the neck, whereas in the case of a breech, the whole fetus will move *en bloc* when we try this test. The head is more movable than the breech, for two reasons:

1. On account of its globular shape it is not so completely invested by the uterus as the breech, but is only in contact with the uterus in certain places.

2. The articulations of the neck enable it to move from side to side independent of the trunk, while the breech being part of the trunk can only move *en bloc* with the latter. In con-

sequence of this it is possible to ballot the head between the hands, a process which is impossible in case of a breech. If we do not get the ballotment of the head, and if the hand in following up the outline of the back seems to pass over a large, irregular, indefinite mass, and especially if we can feel the fetal small parts at the upper end of the fetus, we can be pretty sure that the breech is occupying the fundus.

Note.—Jellett says that the upper pole in difficult cases has a tendency to get back behind the ribs, and that you can often facilitate your examination in these cases by pressing the lower pole upwards and backwards towards the same side on which the back lies. This will have a tendency to displace the upper pole out from its position behind the ribs, towards the center of the uterus, and at the same time a little forward, so that the examining hand can more easily recognize its distinctive features.

III. Having ascertained upon which side the back is lying, and which pole of the fetus is occupying the fundus of the uterus, we can now turn our attention to the lower pole of the fetus, and in studying its position we will first make use of the superficial pudic, or Pawlic's grip. It is made by the fingers of the right hand. Place the thumb over the right Poupart's ligament, and the fingers over the left. Now gently sink them down and approximate them so as to grasp the lower pole of the fetus. Sometimes the layer of fat in the abdominal wall will obscure what you are feeling, and in these cases you can often improve the condition, by trying to insert your fingers in the interval between the fat and the ligament so as to lift the pad of fat up out of the way. In this locality you would either grasp the head or the breech. The breech is much larger, more indefinite, much softer, less movable and presents no sulcus as one would feel between the head and the anterior shoulder, while the head is much smaller, is more movable, and presents the characteristic cannon-ball feeling which is so easily learned and is so impossible to mistake for any other part of the fetus. By using this grip we can determine thirteen diagnostic points:

1. Whether it is a breech or head presentation, as already described.

2. It is especially useful to distinguish a normal from an abnormal head presentation, because by this means you can

diagnose between vertex, brow, and face presentations, by observing the relative position of the chin and the occiput above Poupart's ligament. By occiput is meant the prominence of the occipital protuberance. In a normal case the head being well flexed, the fingers will naturally sink deeper on the side of the occiput than they will on the side of the flexed chin. However, if the chin becomes extended you will get a brow presentation, the occiput will be thrown back, and it will be equally easy for you to sink your fingers on either side. Exaggerate this a little more and you get a face presentation, and this time the chin being fully extended, the fingers sink more easily on its side than they do upon the side which is now mostly occupied by the occiput, or, according to Jewett, "If the chin lies higher than the occiput it is a vertex; if both are at the same level, it is a brow, and if the chin is lower than the occiput it is a face presentation." (By "higher" Jewett means nearer to the fundus uteri.)

3. If the chin can be felt anteriorly the case must be an occipital posterior, because the back of the head is against the posterior wall of the uterus.

4. If the patient is not in labor, and if the presenting part fills the brim, it can only be a vertex. Normal primiparæ are generally engaged for three or four weeks before labor, while multiparæ are sometimes not engaged until the membranes rupture.

5. If the patient is in labor, and the head is past the brim, the resistance experienced by the fingers may also be due to some portion of the fetal trunk, which has become, or is becoming impacted within the pelvis. In such a case, the part of the fetus which is most usually felt is formed by the shoulder and a part of the back, and the head, or presenting part, would be on or near the perineum.

6. As a general rule, we may say that in primiparæ the head is generally fixed during the last three or four weeks of pregnancy, while in multiparæ it may not be fixed until the beginning of labor, owing to the greater relaxation in the bladder of the abdominal muscles. "So that, if we meet a case in which the head ballots freely above the brim at a time at which it should be fixed, pelvic contraction is the first condition to be thought of" (Jellett). Other conditions which tend to prevent fixation of the head are: Pendulous abdomen, placenta

previa, face or brow presentation, occipital posterior presentation, or a hydrocephalic head.

7. In using the superficial pelvic grip the most prominent part of the head is on the same side as the small part in a normal case, and on the same side as the back in abnormal or face presentation.

8. The degree of ease with which the prominence is felt indicates the extent to which descent has occurred, but only an abnormal or face presentation.

9. Sometimes the relative size of the child and its head can be roughly estimated, *e. g.*, hydrocephalic head.

10. You can often locate the anterior shoulder while using this grip, the shoulder on the left side of the median line indicating a left position of the fetus, and on the right side of the median line a right position of the fetus. The anterior shoulder, when near the median line, indicates an anterior position, and a distance from the median line an occipital posterior position.

11. During uterine contractions, on careful palpation in the region of the internal abdominal ring, one can often distinguish a round cord on either side (the round ligament), from which important information may be obtained. In the first place the intensity of the contraction gives us some idea as to the manner in which the uterus is acting, and secondly, by noting their course as pointed out by Palm and Leopold, we are enabled to diagnose the position of the placenta in about eighty-eight per cent. of all cases. When the round ligaments are found converging towards the fundus of the uterus, the placenta is usually situated in its normal position upon the posterior wall, whereas, when they are parallel or diverging, the placenta is situated between them on the anterior wall.

12. During labor palpation also gives us valuable information concerning the lower uterine segment, when there exists some obstruction to the passage of the child, or some malposition of the fetus. You can sometimes notice in these cases that the retraction ring (the junction of the lower dilating part and the upper retracting part of the uterus) will be felt as a transverse ridge extending across the lower portion of the uterus. When it rises one and one-half inches above the symphysis it constitutes one of the signs of threatened rupture of

the uterus, but here we must always exclude an extended bladder.

13. The location of the placenta, when implanted anteriorly, can sometimes be determined in external examination. The convex margin can occasionally be felt as a resisting ring, or you may notice that within the placental area the fetal parts are obscured to the touch.

Just here I might mention that I do not assume that the beginner will make out all these points, nor even that an expert can make them all out in every case, but if one will only take the trouble to examine every case that comes under his observation, he will soon become very expert, and by summing up all the points that he can demonstrate in each particular case under observation, he will rarely fail to make a correct diagnosis.

Deep Pubic.—To make this grip the examiner must turn around and face the patient's feet. He then places his hands over the abdomen so that the finger tips are just above Poupart's ligament. Wait for a moment or two, to catch the muscles off their guard; in the meantime ask the patient to take a full breath and then let it out. As the diaphragm ascends and the abdominal muscles relax, gently but firmly sink your fingers downwards and backwards under the pubic arch. This grip is only to be used after the presenting part has engaged, so your fingers will either come in contact with a large, soft, irregular mass corresponding to the breech, or the tips of your fingers will come in contact with a smooth, round, globular mass corresponding to the head. In my small experience, when once I could feel that hard cannon-ball with the tips of my fingers, I felt as if I had progressed a long way in the diagnosis, because you are sure that you have a head presentation, and if it is engaged so well that you require the deep pelvic grip to feel it, you may be comparatively safe in thinking that you either have a normal presentation, or else you have a sufficiently roomy pelvis to accommodate the head in its malposition. The same rule applies here as in the superficial pelvic grip as regards the relative position of the occiput and chin, and is concisely stated in the following phrase: "That side on which the hand descends furthest is the side to which the back is directed, in a normal presentation, because the chin will be flexed and the hand will go down further on the side of the occiput."

Auscultation.—From the time of Depaul onwards the practice of auscultation has steadily increased in popularity, as a means of diagnosing, first, the existence; second, the life; third, the presentation and position of the fetus; fourth, the probable situation of the placenta, and fifth, twin pregnancy. It can be carried out in three ways:

1. By placing the ear upon the abdomen. This sometimes enables you to hear heart sounds that you would not be able to catch with the stethoscope, but I have always found that I could not localize them very satisfactorily by this method.

2. By using a stethoscope. This I have always found to be the most satisfactory, especially if you press rather firmly against the abdominal wall, as it then makes a solid medium which is better for conduction. With this method you can localize the sounds, and this is very important in diagnosing the position of the fetus.

3. I believe that Dr. Fenton prefers the phonendoscope, and that it should only be placed lightly upon the surface of the abdomen. He claims that he can hear sounds by employing this method that would not be detected by the other methods.

Fetal Heart Sounds.—These are sounds exactly similar to the maternal heart sounds, with the exception that the rate is twice as fast and the sound is not so loud. They very closely resemble the ticking of a watch. Their average rate is 140, and the highest and lowest rate in the case of infants who have been healthy at birth is, respectively, 160 and 120 (Depaul), but in pathological cases they may be much lower, or so high that they can scarcely be counted. Some men claim that a slow heart count indicates a male child, while a rapid count indicates a female child.

I do not know just how much reliance most men put upon heart sounds for diagnostic purposes, but in the cases that I have seen during this year I have placed great reliance upon them, and have rarely seen them fail if their significance is properly appreciated. One should always remember the following rules:

1. In a normal primipara, if the case is a head presentation the heart sounds will be below the umbilicus, on the left side in an l. o. a. and on the right side in an r. o. a.

2. If the case is an occipito anterior the heart sounds will have their site of maximum intensity close to the middle

line—that is to say, about one to two inches from the middle line; while if it is an occipito posterior position the site of maximum intensity will be away out in the flank.

3. In breech cases, before the lower pole has started its descent the heart sounds will be heard at the level of or above the umbilicus on the right or left side according to the position.

Exceptions to these Rules.—1. In multiparæ the head may not engage until after dilatation has taken place, so you cannot put much dependence upon their position as regards their height in the abdomen; but, of course, their significance as to right and left is unchanged.

2. On account of the rectum being on the left side it is only natural that there is more room in the right oblique diameter, hence the great majority of cases start in this diameter, either as a left occipito anterior, or as a right occipito posterior. It is this right occipito posterior position of the fetus that is the stumbling-block to so many men, especially as the great majority of these cases turn to the second position as they descend into the pelvis. While the occiput is posterior the head will have a tendency to be in an extended position. This throws the chest forward so that the heart sounds are heard in front near the middle line, because the chest is in close contact with the abdominal wall. Therefore, when we locate the heart sounds in the site for the second position, we must always consider the possibility of it being an occipito posterior position with the head extended.

3. In any face presentation, if the occiput is posterior, the head will be extended, and the baby's chest being thrown against the mother's abdominal wall the heart sounds will be heard near the middle line.

The funic souffle is a blowing sound which is heard in certain cases on listening over the fetus, and which is synchronous with the fetal heart. It, as well as a very rapid or a very slow fetal pulse rate, is supposed to indicate a bad condition of the fetus.

4. Heart sounds heard in more than one position, especially if there is an interval between them where they are very indistinct or die away altogether, is the most important diagnostic sign we possess of the existence of twin pregnancy.

Vaginal Examination.—Internal examination is advisable in all cases as a part of the preliminary examination in women

pregnant for the first time, and in others whose obstetrical history leads to a suspicion of pelvic deformity it is imperative. For my own part I think that we should depend almost entirely upon abdominal examinations for our diagnosis. The obstetrician must make one vaginal examination to guard against such an accident as a prolapsed cord or limb, and at the same time to secure confirmatory evidence of the correctness of his diagnosis by external palpation. By it can be determined:

1. The size and condition of the vulva and perineum. If you are examining a primipara try to estimate the probability of having a tear, and the amount of time it will require to prevent it. In multiparæ notice whether you have a relaxed outlet, or perhaps the presence of scar tissue indicating old tears. Perhaps you may chance to notice meconium upon your examining finger, or it may be noticed upon the aseptic pads covering the vulva. As a rule when we see meconium in the discharge we at once conclude that we have a breech, but this is not always the case. We may get meconium in vertex presentations, but it is always a sign for rapid delivery, as there must be some undue pressure upon the fetus.

2. As your hand enters the vagina you can estimate the size and condition of it, also the presence of a prolapsed cord or limb if such a condition should happen to exist in the case under examination.

3. Now hunt with your examining finger for the cervix. If it is readily found you can, as a rule, assume that you have a normal position, but if the cervix is placed far back in the vagina so that it is hard to find with the examining finger, beware, as you will often meet this condition in malpositions of the fetus, especially occipito posterior positions. Having found your cervix, notice the amount of dilatation that exists, and whether the cervix itself is soft and dilatable, or hard and rigid. At the same time run your finger around the edge to see if there are any old tears in it. Another point to be noticed is the presence of a placenta previa, either marginal, partial, or complete. Always be prepared for trouble when the head begins to descend through the canal and pushes the undilated cervix before it.

4. If the cervix is dilated, notice the condition of the membranes. Does the probable stage of the labor, the amount of

dilatation of the cervix, and pouching of the membranes seem to correspond, or does there seem to be something irregular about them? In a primipara, in a breech case, or, in fact, in any malposition, the presenting part will not fit accurately into the cervix. This allows the whole force of the uterine contraction to come upon the liquor amnii, and it, of course, tries to escape at the point of the least resistance, which is the cervix. If the one is rigid you will notice that the membranes will protrude like the finger of a glove, and they will break early, but if the case is a multipara the cervix dilates easily, and you may find a large, wide pouch of membranes, which sometimes descends to the external os before it breaks. In any case, if you have the waters coming away with a rush in the early part of labor, suspect a breech or a malposition of the fetus.

5. Having ascertained the condition of the cervix and the membranes we have yet to determine which pole of the fetus is occupying the cervix, the amount of advance that it has made, and if there is sufficient room for it to pass through the bony pelvis. If the presenting part is not fixed, we endeavor to touch the promontory of the sacrum with our middle finger, while the base of the thumb is pressed against the subpubic ligament. If we cannot touch the promontory of the sacrum, we are pretty sure that we have plenty of room. If we can touch it, we mark the position of the subpubic ligament upon our first finger, and then measure the distance between this point and the end of the second finger. A measurement of four inches indicates a dangerously contracted pelvis, while three and one-half inches is generally taken to be too small for delivery of a live child per vaginam.

6. As to the nature of the presenting part and its fixity this should be determined by external examination; however, vaginal examination sometimes gives valuable aid. The first circumstance to excite suspicion on examination, even with the os undilated, is the absence of a hard, globular mass felt through the lower segment of the uterus, so characteristic of the head. Personally, I never bother with the fontanelles and sutures, except to note their presence and that marked separation of the head bones indicates a hydrocephalic head, as they are so often unreliable. In a breech case you get a much softer presenting part, offering three points of bony resistance formed by the tuberosities of the ischium and the tip of the coccyx.

Its surface markings are the aperture of the anus and the external genitals. It must be diagnosed from a face presentation, but here you have the characteristic aperture of the mouth with its bony ridges for the teeth, and the fact that the anus does bite or grip your finger (Dr. Wright). Lastly, in cases of doubt, where the cervix is well dilated, you can make sure of your diagnosis by introducing your hand into the cervix and feeling for an ear, etc. Be careful that the ear is not doubled upon itself.

The Course and Progress of Labor.—1. The progress of labor is best determined by noting the descent of the presenting part. In the early stages this can be determined by measuring in finger breadths its height above the pelvic brim.

2. After the chin has disappeared below the pelvic brim the rate of advance can then be determined by the deep pelvic grip until it has descended almost to the perineum, and by that time you can ascertain the amount of descent by noticing the amount of the bulging of the perineum until you feel the resistance of the presenting part.

Jellett says that this is a very much more reliable method of determining the advance of the head than is a vaginal examination, because in all cases of delayed labor with strong uterine contractions the caput succedaneum hourly increases in size and bulges downwards more and more; consequently we may be led when making a vaginal examination to attribute the diminished distances between the caput and the perineum to the descent of the presenting part instead of, as may be the case, to the increasing size of the caput.

In conclusion, I will briefly state the advantages of external palpation over repeated vaginal examinations:

1. It can be performed at any time before the beginning of labor without the use of an anesthetic. You can send your patient word that you will call upon her at a certain date, and request her to save a specimen of urine.

2. No patient can object to it upon the plea of indecency. In fact it is an excellent procedure to overcome the extreme bashfulness of some patients. In these cases you can start with your hands under the thin sheet, or even an undercover, because you are intending to gradually work it off anyway.

4. It makes a good beginning for a complete physical diag-

nosis for the purpose of detecting heart murmurs, diseased breasts, etc.

5. Some men say that this is not practical, because, even if you do diagnose the position of the child during the last month of pregnancy, the position may be different at labor. In answer to this argument I say that it is practical because, in the first place, if you go at some convenient time and make sure that you have a normal position, you can rest assured that everything will come along in a natural way at the confinement. To be sure of this is worth something to a man if he happens to be engaged so that he cannot leave at once when he is called for the confinement. Secondly, although I do not dispute the argument that the child often changes its position during the last month of pregnancy, still on inquiry I have found out from men of large experience that although they have often noted that an abnormal may change to a normal, they have never seen a normal case change to an abnormal. So if we diagnose an abnormal position we will be prepared to deal with it, knowing that if there is any change in the position it will be towards the normal.

6. It must be acknowledged that its value is greater before than during labor. Before labor it is ten times more certain than vaginal examination, and even in labor, especially at the first of it, you can generally make a correct diagnosis by this method.

7. It practically eliminates the danger of infection through the vagina, owing to germs being carried upon your hands during some of the repeated examinations. It is now an acknowledged fact that we cannot completely sterilize our hands. Of course, we can wear gloves which can be boiled, but the great source of infection is the vulvæ, and the insurmountable barrier is that women will not consent to have them boiled.

8. The progress of labor can be judged just as accurately after a little practice by this method as it can by repeated vaginal examinations.

9. It compels a man to study the different positions of the child and their relations to the birth canal before he can use this method, and thus it makes him a more intelligent obstetrician.

THREE CASES OF TUBAL PREGNANCY.

BY C. H. WHITEFORD, M. D.

Cases of tubal pregnancy are not very uncommon. In the course of fourteen years' attendance on hospital practice I have seen twenty examples in addition to the three recorded below, and know of at least six other cases occurring in the private practice of my friends.

Pain and hemorrhage are usually the first indication that there is anything amiss, consequently it is not the surgeon but the general practitioner who first arrives on the scene, and on whose recognition of the gravity of the case the life of the patient frequently depends.

The following cases markedly contrast with each other, and illustrate three of the recognized conditions which may be produced by rupture of or hemorrhage from a pregnant tube:

Case I:—A woman, aged twenty-four, was seen in consultation. She had been married seven years. There were two children, aged six and five years, and no miscarriages. Menstruation had been regular for five years up to thirty days before the date of consultation, when the period due failed to appear; eleven days previously she suffered pain in the vagina and rectum; eight days previously the pain increased, and a little blood was lost per vaginam; four days previously diarrhea occurred, with the passage of a few blood clots by the vagina; one day previously the diarrhea was accompanied by pains resembling those of labor.

Diagnosis.—When first seen in the morning the abdomen was slightly distended and tender, with an indistinct sense of resistance above the pubes. It was resonant except in the flanks, where dullness, not affected by change of position, was most marked on the left side. On vaginal examination the uterus, of normal size, was found low down, close behind the pubes. The cervical canal was closed. In Douglas's pouch was a smooth, very tender mass, resembling an ovary. The rest of the pelvis felt full and boggy. On rectal examination the same boggy mass was felt. The upper rectum was constricted. The lips were somewhat anemic. The pulse was 110, and the temperature 101°. A diagnosis was made of

rupture of a pregnant tube, with coagulation of the effused blood.

Operation.—When seen later at 9 P. M. abdominal pain was very severe, and not relieved by morphine; the lower abdomen was much more distended. The temperature was 103° , and the pulse 134. The face was drawn, and the breath had the sweet smell frequently associated with sepsis. I considered that the blood in the abdomen was becoming infected, and that possibly a fresh hemorrhage was taking place, and therefore decided on immediate operation. At 1 A. M. I opened the abdomen by an incision six inches long through the right rectus. The omentum and small intestines were partly adherent to the pelvic contents. On separating these adhesions handfuls of dark clot and fluid blood appeared. The right ovary and Fallopian tube, which was ruptured at its center, were removed. At this stage the anesthetist reported that the radial pulse had disappeared. The omentum had several clots incorporated with it, as had also the rectum and uterus. These clots were so adherent that they were left. Before tying the last suture in the abdominal wall, 5 1-2 pints of warm saline solution were poured into the abdomen through a funnel and tube. This improved the patient slightly, but failed to restore the radial pulse. No superficial vein being visible, the *venæ comites* of the right brachial artery were exposed in the middle of the arm. These veins were so small that it was impossible to introduce a cannula. The incision was then prolonged up to the fold of the axilla, where the veins united, and into this vein 8 1-2 pints of hot saline solution, with 1 ounce of brandy, were injected.

After-history.—The patient had no sickness, slept fairly, and passed 1 pint of urine during the night and 4 pints of urine in the twenty-four hours following operation. Recovery was steady, the pulse rapidly slowed, and on the twenty-fifth day was 78. Recovery may be attributed to the large amount of fluid injected, 1 3-4 gallons in all, which in the first place relieved shock and afterwards enabled the emunctories, especially the kidneys, to dispose of the poison, and to the very able assistance which enabled me to complete the operation, which was performed in a small cottage, in just over the hour.

Case II.—The patient, a married woman, aged twenty-three, was seen in consultation. She had two children. She had missed her last period. Thirty-six hours before being seen,

shortly after taking a dose of salts, she was seized with abdominal pain, faintness, and convulsions.

Diagnosis.—When seen the patient was found blanched, a distended abdomen, and a thready pulse. A diagnosis was made of rupture of a pregnant tube, with hemorrhage into the general cavity of the peritoneum.

Death.—Immediate operation being imperative, this was commenced at 10 P. M. A minute quantity of chloroform and ether was given, followed by infusion of saline solution and strychnine into the right brachial veins, preliminary to celiotomy, but death took place soon after the commencement of the infusion. No abdominal incision was permitted.

Case III.—This patient, seen in consultation, was a married woman, aged thirty-four. She had one child five years old, and no miscarriage. She had passed through two attacks of rheumatic fever. The patient complained of a painful swelling in the left side of the abdomen. The last period took place five months ago. Eleven weeks ago she was taken suddenly ill with shivering, accompanied by pain in the left iliac region. This was attributed by the patient to a chill. She saw a medical man, who is reported to have told her that the womb was displaced, and that she must lie in bed in one position for three weeks. At this time, having previously been regular, she had missed three periods. After a week or two a tumor was noticed in the left iliac region; the swelling became large and tense, so that extension of the left leg caused pain. Six weeks ago something seemed to burst, and for twenty-four hours there was a large flow of blood from the vagina. The loss of blood then ceased, and the iliac swelling was noticed to have almost disappeared. Her then medical attendant called another medical man in consultation, as the result of which the patient states that she was told that she had a pregnancy outside the womb, but fortunately this pregnancy had been discharged through the womb. The patient had been up on a couch daily, and a week ago had gone out for a drive. During the last fortnight the tumor had again increased in size and was larger than before. The patient, who was becoming weaker, suffered severe pain.

Diagnosis.—The temperature was normal and the pulse 90, of fair volume and tension. Nothing abnormal was discovered in the heart. On the left side, rising from the pelvis to the

level of the umbilicus and extending two inches to the right of the middle line, was a tense rounded tumor, the size of a coconut, tender on palpation, and giving a thrill and dull note on percussion. On vaginal examination the uterus was found to be pressed downwards and to the right by a globular swelling apparently continuous with the mass in the abdomen. A diagnosis was made of rupture of a pregnant tube with continued development of the pregnancy, probably between the layers of the broad ligament.

Operation.—In view of the increasing weakness and continued pain operation was decided on. An incision six inches long through the left rectus was made over the most prominent part of the tumor. The divided tissues were extremely vascular. The distended, very tense broad ligament was exposed. In the right side of the pelvis the softened uterus was felt enlarged to twice its normal size. The broad ligament was incised, the placenta being on the surface of the tumor; this incision extended through the placenta. Liquor amnii escaped freely, and a living fetus of 4 1-2 to 5 months' development was extracted, the cord was ligatured and dropped back in the sac, which was then packed with gauze. Hemorrhage from the placenta was free but not excessive. No vessels, except those of the cord, required ligature during the operation. The edges of the sac were fixed to the abdominal parietes with a continuous catgut suture. The upper and lower one and one-half inches of the abdominal incision were closed by mass sutures of silkworm gut. At the end of the operation, which lasted an hour and a quarter, the patient was nearly pulseless. No superficial vein being visible the deep brachial veins were exposed in the upper arm, and four pints of hot saline with one-half ounce of brandy were injected.

Death.—The patient completely recovered consciousness with a slow, steady pulse; but three hours after operation the pulse again failed, and, in spite of stimulation, death occurred five hours after operation.

COMMENTS.

Case I. is an example of the common variety, in which, after rupture of the tube, the blood, being slowly and intermittently poured out, is limited to the lower abdomen by adherent omen-

tum and intestines, from which are derived the bacteria which infect the blood clot. Portions of blood clot found to be incorporated with the peritoneum covering the pelvis and viscera should not be disturbed. Their complete removal is impossible, while partial removal only injures the peritoneum, which, if left undisturbed, is quite capable of dealing with these adherent clots. The majority of cases of this class recover after removal of the affected tube and the loose coagula.

Case II. exemplifies the fulminating type of hemorrhage following rupture. I have on several occasions noted the fact that some strain or extra exertion—in this case the result of a purgative—has immediately preceded the rupture. In some instances strong purgatives have been taken in order to produce abortion.

Case III. illustrates what is probably the most usual condition found after rupture of the tube, not involving the death of the fetus, which continues to develop between the layers of the broad ligament. Operation was performed in this case because pain was continuous and the patient was daily becoming weaker. Death from cardiac failure could only be attributed to the shock of the operation on an already enfeebled patient.

Hemorrhage during the operation was moderate, and quite insufficient of itself to account for the fatal issue. Operation gave the patient her only chance, but should have been performed at least two and a half months earlier.



RETRODEVIATIONS OF THE UTERUS.

BY T. G. WILSON, M. D.

One of the most striking features in the recent literature on the subject of retrodeviations of the uterus is the number of writers who maintain that those symptoms, which we have hitherto been accustomed to look upon as being due to some backward displacement, are caused not by this displacement but by some existing complications. One writer at the Pan-American Congress at Panama maintains that there is no normal position for the uterus, and that, whatever the position of this organ, it is only on the supervention of some complication that symptoms manifest themselves. On the other hand, there are authorities who maintain that a retrodeviation is essentially

a pathological condition, and requires treatment whether there are any symptoms directly referable to it or not. Thus, W. D. Haggard, professor of gynecology at the University of Tennessee, in a recent address on this subject, says:—"To disregard a case of retrodeviation simply because it is giving rise to no symptoms at the time, is comparable to disregarding many cases of renal and cardiac disease, gallstones, and errors of refraction, etc., which are often discovered by accident, and to assume that because they are causing no symptoms at the time that they will never do so . . . that inherently the causes which produce the retrodeviation will also engender complications . . . that there is always the element of infection to be considered in the female pelvis, and it is this element of infection that determines the presence or absence of complications, such as adhesions, etc."

Certainly when a uterus becomes fixed in its retrodeviated position we may consider that the fixation is an important element in the symptomatology, and whichever standpoint we take, the question of whether the uterus is fixed or free is a most important factor from the point of view of treatment.

On going through the notes of 900 consecutive gynecological cases seen recently, I find that the uterus was in a position of retrodeviation in 153 cases, or a frequency of 17 per cent. Of these 153 cases, I have noted that in 39 cases the retrodeviation was a result of, or coincident with, some degree of prolapsus uteri secondary to pelvic floor weakening. Of the 114 cases, in 69 the retrodeviation was complicated, leaving 45 cases, or 5 per cent. of the total number, in which the uterus was freely mobile and could be replaced in a forward position. I have noted the symptoms in these 45 cases with a view of determining whether they were to be considered as due to the retrodeviation or to some complications present. In 19 cases the symptoms the patients complained of were more directly referable to some accompanying condition—endometritis, retained decidua, etc.; while of the remaining 26 cases, in whom there was no other abnormal condition present except the retrodeviation, I found that in 23 cases the symptoms complained of were apparently directly referable to the retrodeviation itself, some at least being produced mechanically by the position of the uterus and adnexa.

In regard to such symptoms as menorrhagia, metrorrhagia,

etc., while we must consider these as being directly referable to the condition of the endometrium, we must admit that, in the majority of cases, such complications cannot be effectively treated without at the same time rectifying the backward displacement of the uterus; and whether we are to consider a retrodeviation without symptoms as pathological or not, it would seem as if the patient's general health gets below par, and if any infective condition, endometritis, etc., arises, the retrodeviation becomes an important factor in exaggerating and keeping up the condition, and therefore demands active treatment.

The treatment of those cases which are coincident with prolapsus uteri will naturally be from the point of view of the prolapse, and any method which aims at correcting the retrodeviation, without at the same time restoring the integrity of the pelvic floor, will be doomed to failure, and for this reason I purposely exclude such cases altogether, in considering the treatment of retrodeviation proper. In regard to the treatment of mobile retrodeviations by mechanical means—i. e., pessaries—I am quite aware that amongst many gynecologists pessaries are considered a thing of the past, and if the condition requires treatment at all, that operation is advised; but I cannot help thinking that there are certain cases where the pessary has a distinct sphere of usefulness and should be the method of choice. I refer especially to cases of mobile retrodeviation occurring after confinement, in whom a well-fitting pessary will keep the uterus in a forward position and help to prevent a long convalescence due to subinvolution. I have followed up enough of these cases to convince myself that after a time the pessary may be discarded without the retrodeviation recurring. This period after confinement has been aptly termed the "psychological period of the pessary."

With regard to the treatment of fixed retrodeviation by massage after the combined vagino-abdominal method of Brandt. This method has never gained any foothold in English-speaking countries, and the objections to its use are fairly obvious, but it has been extensively practiced in Continental hospitals, and while working in Professor Chrobak's clinic in Vienna I had some chance of seeing the method of procedure, and examining the patients before, during, and after the treatment. Naturally, it is all-important that the cases should be carefully

chosen, and when this is done it is quite certain that good results can be obtained. I have seen many cases with fixed retrodeviations who would certainly here be advised to have operative interference, in whom after several sittings the uterus has been got into forward position and kept there temporarily by means of a pessary, and after a time it has been possible to discard the pessary without recurrence of the retrodeviation.

The operative treatment of retrodeviation presents a large scope, and the number of operations suggested is a fairly good index that no one of them is generally applicable. Indeed it is rare to go through a gynecological journal without seeing some new operation or modification of some old operation designed for the cure of this condition.

Probably the most usual and most favored operation at the present time is some form of ventrosuspension or ventrofixation; and as regards the after-result, the cases I have had a chance of following up would indicate that the distinction between these two operations depends chiefly on whether the ligatures used for the suspension or fixation are absorbable or not, as a ventrofixation done with an absorbable material, as catgut, in the course of a few weeks becomes practically a ventrosuspension. Apparently tendon, either the formalin prepared or the ordinary biniodide tendon, is very often not absorbed, or at any rate for such a time as to make it justifiable to consider it as an unabsorbable material. I have frequently seen tendon which has been buried in the abdominal cavity for periods up to two and even four years, which was apparently unaffected at the time of a second operation, and on cutting sections through such tendons little or no leucocytal infiltration was to be seen, and as regards tensile strength it did not seem to have suffered at all. Catgut is always absorbed quickly, so that probably the adhesions formed round an absorbable ligature like catgut will tend to be less dense than round an unabsorbable ligature like silk or tendon, round which the adhesions, being denser, will naturally persist longer, and not tend to disappear while the foreign body remains. As a result of these operations the uterus is changed from a pelvic to an abdominal organ, for a time at least, and from being a freely mobile organ it is made into a more or less fixed one; and we have to consider what the result of this fixation will be should the patient become pregnant, and also whether the operation

will permanently keep the uterus in its forward position. In considering this operation there are such a number of modifications of doing it that it becomes difficult to compare them. While some operators insert their sustaining sutures on the anterior surface of the uterus, others use the fundus; and others, again, following Kelly's original suggestion, insert the sutures on the posterior surface of the uterus in order to allow the intra-abdominal pressure to act on that surface. Then some operators use unabsorbable sutures, silk, silkworm-gut, etc., and others use catgut always. There are very different views, too, as to the ultimate result of the operation. The question of what really does happen to the suspensory ligament after a ventrosuspension is an interesting one, and I have kept notes of cases I have examined at varying periods after this operation, and also of cases where it has been necessary to reopen the abdomen at a subsequent operation.

First, in those cases where the ventrosuspension was done with tendon or silk. I have notes of eight of these, six done with tendon and two with silk, and all of whom I have examined at periods from six months to five years after the first operation. In six of these cases the uterus was still in a forward position, and a definite suspensory ligament was palpable on bimanual examination. In three of these six cases the abdomen was reopened, and the actual condition of the ligament could be observed. Two of the ligaments were solid and firm, suggesting that they might cause trouble by preventing the expansion of the uterus during pregnancy. The third was much thinner and stretched out to a length of two inches, and did not apparently take any active part in keeping the uterus forwards. In the other two cases no suspensory ligament could be felt, but the uterus was again in a position of retro-deviation. One of these patients had had a full-time child since the original operation, and the abdomen had to be again reopened on account of further adnexal inflammation. In this case also there was a thin, stretched-out suspensory ligament stretching from the old abdominal incision to the fundus uteri. So that in seven out of eight of these cases there was a suspensory ligament left as a result of the operation, though in two cases it had apparently stretched to such an extent as to cease to be of service in holding the uterus forwards.

These are the only cases I have been able to follow up which

have been done with tendon or silk, as for the last four years most of the ventrosuspensions at the hospital have been done with catgut. I have notes of 27 cases in whom a ventrosuspension was done with catgut, and whom I have examined at periods varying from six months to four years after this operation.

First, in regard to the position of the uterus. In 11 cases the uterus was in good position at the time of the second examination; in 16 cases it was again retrodeviated. In none of these cases examined after six months was any suspensory ligament to be felt on bimanual examination. Of these 27 cases the abdomen was re-opened in 17 of them, and the actual condition of the pelvis could be ascertained, and in none of these cases was any sign of a suspensory ligament discovered. The shortest period after the first operation that the abdomen was re-opened was four months. Six of these cases had had the anterior aponeurosis included in the suspensory ligatures, so that the original operation was a fixation. In the ten cases which were not re-opened it is impossible to say for certain whether any sign of a suspensory ligament would have been found, but it is certainly remarkable that in all the cases that were re-opened there was no suspensory ligament found. In some of these cases the catgut used was formalin catgut, in others biniodide catgut, and in others iodine-prepared catgut. While I have recorded these results as I have found them, I naturally realize, from hearing of the experience of others, that sometimes a suspensory ligament does persist after a ventrosuspension done with catgut, and especially if there has been any suppuration in the abdominal wound. Taking these two series together, we get 35 cases who had had a ventrosuspension done, and at varying periods from six months to five years afterwards, the uterus was found not to have retained its forward position in 18 of them. While agreeing that it is not a fair criterion to take 18 out of 35 cases, as during this period there were a great many other cases who did not report themselves and who were presumably well, and also admitting that in some of these cases the retrodeviation had recurred as the result of a fresh inflammatory process, the fact of finding that the operation had not fulfilled its object in such a number of cases indicates that a ventrosuspension as generally done, and especially when absorbable ligatures are used, cannot be re-

garded as really effective in permanently maintaining the forward position of the uterus.

The above results would indicate that a ventrosuspension done with catgut does not fix the uterus permanently to the abdominal wall, but merely holds it in a forward position for some months, and so gives the uterine supports time to regain their tone, while, when an unabsorbable ligature is used, the uterus as a rule is definitely suspended by a cicatricial ligament. It seems rather difficult to believe the statement we often see that such a ligament will stretch with pregnancy and involute after delivery, and so still hold the uterus forwards. I have attended five cases in confinement who have had a ventrosuspension done, one with silk, one with tendon, and three with catgut, and in all these cases the confinement was easy. Four other cases who had had ventrosuspensions done, and who have had what they described as normal labors, are included in these 35 cases. Of these 9 cases in only three was the uterus in a forward position after the confinement, which is instructive, as indicating the importance of parturition as a causative factor in retrodeviations, and also how unlikely it is that the suspensory ligament, if one should be present, will stand the strain of the growing uterus during pregnancy, and still hold the uterus forwards after confinement.

It is generally admitted that a ventrofixation proper is not a justifiable operation in a woman who is likely to have children, though even now one constantly sees accounts in the journals of cases where Cæsarean section has been necessary when such patients have gone to term. In regard to this, it is of interest to note that Andrews, in a recent review of the effects of ventrofixation and ventrosuspension on subsequent pregnancy, has collected 395 cases of labor following these operations, and of these there were 20 cases where Cæsarean section was performed as a direct result of difficulties caused by the previous operation. Of these 20 cases, 14 followed ventrofixation and six followed some form of ventrosuspension. He came to the conclusion that the method which caused least difficulty with subsequent labor is a ventrosuspension, though he adds that this operation has the theoretical objection that the suspension may not be permanent. In a great number of these cases the original operation was done on account of retrodeviation accompanying prolapsus uteri.

While the position of the uterus after the removal of the ovaries seems to be of little consequence, if it is wished in such a case to put the uterus in a forward position, there would appear to be no objection to a ventrosuspension done with catgut; but in those cases in which the abdomen is opened and the ovaries are not removed, what is to be done to correct a retrodeviation? If a suspension with catgut be done, judging from these cases, we can never tell exactly what will happen afterwards. If the uterus remains forward, well and good; but if not, can we ask the patient to have another suspension done every few years or after each confinement? Or are we to use an unabsorbable ligature, and aim at having a firm suspensory ligament left, which may cause trouble with a subsequent pregnancy, or if not, may stretch so as to cease to be effective as a sustaining ligament, and which will remain as a potential source of danger from giving rise to internal strangulations, etc.? That this is a real possibility we have only to read the accounts of such cases recorded by Jacobs, Leopold, Rufus B. Hall, Thomas, Lindtors, and many others. Is there no other method by which the uterus can be kept forwards without leaving a permanent source of danger in the abdominal cavity? The different methods that have been suggested by the vaginal route do not seem to have been very effective, though they all have their warm advocates. Shortening of the so-called utero-sacral ligaments, vaginal shortening of the round ligaments, Pryor's operation and vaginal fixation may be mentioned, though this last method is now generally considered as unjustifiable in a child-bearing woman. The abdominal route is at present the favorite one, at any rate when the condition is complicated, for as a rule it is these complications and not the retrodeviation that demands a section. For an uncomplicated case, if it requires surgical treatment, the Alexander-Adams operation is certainly the method of choice, and some operators apparently prefer to finish up with this operation after having dealt with the pelvic condition through a median incision, though the extra element of the time required must be a disadvantage. Noble's suggestion of using a transverse incision, after the method of Pflannelstein, in these cases, and after dealing with the pelvic condition, shortening the round ligaments extra-peritoneally from the extremities of the original incision, would seem to be the ideal operation, at any

rate in cases where a large abdominal incision is not required. The different methods of shortening the round ligaments intra-peritoneally, Wyllie's, Mann's, and Baldy's operations, while they all have the, to my mind, theoretical objection of, leaving the weakest part of the ligaments—the part in the inguinal canals—as one of the points of fixation, certainly do maintain the forward position of the uterus, and apparently do not interfere with subsequent pregnancy. Gilliam's operation, which has been warmly advocated by many gynecologists, is open to the objection that an opening is left on either side where a coil of gut may become strangulated, though it has been suggested that the parietal peritoneum may be sewn to the round ligament in order to obliterate these two spaces. All these operations are more or less on trial, and until the ultimate results as regards their permanency, and especially the effect of subsequent pregnancy, are more fully recorded, it is impossible to lay down any fast rule; but granting that they do not cause interference with gestation and parturition, when surgical interference is adopted for the cure of a retrodeviation in a child-bearing woman, the utilization of the round ligaments to effect this certainly seems to be the most rational procedure.

Current Comment.

H. D. Beyer, M. D.:

It is always my custom to place the patient suffering with *prolapse of the uterus* on a preparatory treatment, until very complete retraction and contraction of all structures take place. This treatment consists in first replacing the uterus in the knee-chest position and keeping it in place by having the patient remain in bed, in the recumbent position or in the Sims position, for a period of from five to ten days. If the prolapse at any time recurs, as for instance through straining at stool, it is immediately reduced by the patient or a nurse. So as to be sure the uterus is always well within the pelvis it is advisable to instruct the patient to assume the knee-chest position two or three times each day for from five to fifteen minutes; second, a vaginal douche of a gallon or more of hot bichloride solu-

tion (1:4000) is administered twice daily. The intestinal contents are kept soft by laxatives.

The result of this preparatory treatment is at once most striking. A uterine cavity which measures five to six inches in length will be reduced to three inches, and if the treatment is kept up sufficiently long to two and a half inches (normal). There is also the same degree of contraction of the uterine and vaginal walls. Ulcerations of the cervix and vaginal walls, though extensive before the instigation of the treatment, rapidly heal. In passing I may add that such a preparation should be practiced before introducing a pessary to retain a prolapsed uterus in position. It will prevent ulcerations and other complications.

Having gained every advantage of this preparation, the next step in the treatment must be to secure permanent involution of the uterus and vagina, and reconstruct the supports of the pelvic floor and vaginal outlet. It would seem advisable to also restore the intra-abdominal support of the uterus, securing the uterus in the position of ante flexion through an abdominal operation, but in our experience this has been very rarely necessary. The ante flexed position of the uterus is efficiently gained through the plastic operations to be described.

Permanent involution and even very marked atrophy of the uterus is secured by the operation of amputation of the cervix uteri and the restoration of the uterus to normal position. The method of amputation of the cervix uteri which has proven most satisfactory, is that devised by A. Martin, a description of which is to be found in many text-books.

♦ ♦

A. W. M. Robson, M. D.:

I recently operated on a case which well illustrates the advantage to be derived from a *microscopical examination during the progress of the operation*. The case was that of a patient who presented a round, smooth swelling in the anterior abdominal wall, apparently involving the liver. There was a divergence of opinion as to whether this was malignant or inflammatory. Under these circumstances, the colleague with whom I was undertaking the case agreed that I should ask a pathologist to be present at the operation so as to make a microscopical examination of the tumor as soon as it was exposed. On cutting into it the appearances at first sight sug-

gested that it might be actinomycosis, though there was still a question of sarcoma, tubercle, or breaking-down gumma. The naked-eye characters of the material left us in doubt, but the microscopic appearance and the marked thickening of the vessels pointed to its being a gumma. The subsequent course of the case under antisyphilitic treatment abundantly confirmed the correctness of the diagnosis, which the history before operation had not been sufficient to determine.

♦ ♦

E. E. Montgomery, M. D.:

Shall not the use of *the curette* be preceded by dilatation? What method of dilatation shall be employed? What form of curette? These are questions which confront the operator. I have seen the curette used without previous dilatation and this may be done where the cervical canal is patulous, but in the undilated canal it has always seemed to me that the procedure was accomplished at the expense of injury of the cervical canal so serious that its future potency must be doubtful. One important essential after the operation is efficient drainage, and this is certainly best accomplished by effective dilatation. Probably the majority of operators employ some form of parallel bar dilators, but, after long experience, I very much prefer the graduated metal bougie. I use a set of Pratt's dilators, two sizes upon a central handle, ranging from 11 to 47. The employment of these instruments is not free from danger of perforation but is no greater than with the parallel bar, while the possible injury from such an accident is far less than it can be in the latter instrument. Indeed, the most grave injuries I have ever seen attend curettement have been associated with the bar dilators. In any form of dilatation it is important that the position of the uterus shall have been determined by the bimanual examination and the instrument introduced in accordance with the knowledge thus attained.

The cervix should be seized with two double tenacula, both in the anterior lip. Thus held, it is much less likely to undergo any injury from tearing out during the procedure. The bougies, beginning with the largest that will readily pass, are introduced one after another until the desired dilatation has been accomplished. The instruments must be introduced with the greatest care; the first without force, using it as an explorer, remembering that the canal may be somewhat tortuous. In

flexions, its point should be made to hug the convex surface for the other wall is likely to be thinned and may easily rupture at any stage of the dilatation. I have seen it take place during the introduction of the last instrument.

The next step is the employment of the curette. Much discussion has been given as to whether it shall be a sharp or dull instrument. I prefer the sharp instrument and one through which the curetted surface can be flushed as the operation proceeds. The clean-cutting instrument removes the tissue with less injury to the remaining structures and effects a definite purpose. The irrigating fluid should be either a chlorid of sodium or a two per cent. carbonate of sodium solution; in either case quite hot. Such a solution removes débris, stanches bleeding, and leaves a clean surface. The curette is moved over the entire surface of the uterine cavity in long sweeps, exercising care not to puncture a weakened and degenerated uterine wall. The scrapings should be carefully observed and in all cases in which there is suspicion of malignant disease, should be preserved for microscopic investigation.

Ordinarily, upon the completion of the curettement, the cavity is swabbed with a saturated solution of iodoform in ether. The ether rapidly evaporates, leaving a covering of iodoform. When the procedure has been done for the relief of dysmenorrhea or with the hope of overcoming sterility it is preferable to pack the cavity for twenty-four to forty-eight hours with iodoform gauze. Such packing may also be employed when there is a disposition to hemorrhage, or when a puncture of the uterine wall has occurred.

♦ ♦

Henry F. Gau, M. D.:

Not every physician possesses the requisite qualities to successfully treat *functional nervous diseases*.

The phobias, suspicious, variable emotional moods, tend to produce an erratic mental condition, calling for extreme tact and patience on the part of the attending physician and nurse. These patients lack confidence in themselves and as a rule distrust others.

Painful sensations are intensified, which is typically illustrated in labor at term. The short infrequent pains preceding the actual dilatation of the uterus in a normal state of labor are intensified and prolonged in neurotics, and instead of last-

ing a few hours may drag along for a day or more, the patient meanwhile fretting and worrying during the day and losing sleep at night. With the onset of true labor pains their nervous energy is completely exhausted and their physical condition prostrated, and require artificial aid to complete labor.

In the treatment of functional nervous diseases the prime requisite is to gain the patient's confidence and to direct the mind in some other channel, away from her diseased conditions. This education must be accomplished without the knowledge of the patient, for they persistently assert the strength of their will-power, unconscious of the fact that they are continually using it in the wrong direction.

Pregnancy is attended with an excessive production of toxic and chemical bodies, the elimination of which requires the careful regulation of the secretions of the skin, kidneys, and bowels.

Emotional shocks, fears, and worries must be absolutely eliminated, as they often give rise to another acute attack in convalescence from a neurosis. Assure your patient that she has no organic disease of the nervous system which is likely to be followed by any permanent paralysis or any form of insanity, and though the pendulum may continue to swing to and fro, ultimately she will acquire decided and lasting relief.

A nourishing, well-regulated diet, a maximum of fresh air and sunlight, together with a judicious use of the milder forms of hydrotherapy, will improve the physical condition and relieve the troublesome insomnia.



H. L. Finley, M. D.:

While *eclampsia* is one of the most dreaded complications of pregnancy, it can practically be eliminated by carefully regulating the diet, bowels, and kidneys. In ten years of practice, I have had but one case of eclampsia. Prophylaxis is the treatment, and is so nearly uniformly successful that a physician ought to feel the responsibility should a case occur and he has been negligent in his duties.



G. E. Shoemaker, M. D.:

Among disorders of pregnancy, may be mentioned *extra-uterine pregnancy* of an abnormal type.

This last is a source of occasional confusion in diagnosis. The day has come when the ordinary case of ruptured extra-

uterine pregnancy is recognized by the family physician. Many physicians making the diagnosis with certainty, call in a surgeon at the proper time and the patient is saved without the slightest difficulty. But certain cases of extra-uterine pregnancy do not show any missed or delayed periods, do not have the typical tearing pain and collapse, but most confusing of all, instead of the slight brownish discharge, have quite a severe and continuous bleeding, so that the case is treated as one of ordinary miscarriage, or without a diagnosis. The original hemorrhage into the peritoneum may be followed by a peritonitis which walls in the blood mass; the result is that uterus, tubes, ovaries, and blood are incorporated into one rounded body which appears to be mistaken for an impregnated uterus, and efforts are made to curette it and thus check the bleeding. Several cases of this character have been brought to the hospital service of the writer in a septic condition, with a history of curettement for supposed miscarriage and retained placenta. One was sent in a few months ago. She had had no delayed or missed periods but had bled every day for six weeks; at times severely. The history of pain followed by faint feelings apparently did not impress her physician, who was finally discharged. The next physician, impressed chiefly by the continued hemorrhage, etherized and curetted her. This did not relieve the flow and when, being sent by him to the hospital a week later, she came into my hands, she had had a chill, temperature, vomiting, and pain from the plastic peritonitis surrounding an infected hematocele reaching as high as the umbilicus. Operation was followed by a good recovery. The confusing element here in the minds of the physicians who saw the patient was evidently the continued and decided uterine hemorrhage, though with all the facts of her history developed by questioning, it was not difficult to obtain a good history of ruptured extra-uterine pregnancy.



Lewis Beesly, M. D.:

My attention having been drawn to certain articles on *acetonuria*, acid intoxication, and delayed chloroform poisoning, I thought some investigations might with advantage be carried out with the endeavor to ascertain the significance of the presence of acetone in the urine in surgical cases, and with the object of explaining some of the toxic symptoms following

the administration of general anesthetics. I have during the past nine months carried out a series of examinations of the urine of patients before and after operation. These observations, made on children from four to twelve years old, have been advanced as to the origin of acetone or diacetic acid; the most recent information on this subject will be found in the papers by Stiles, Macdonald, and Brackett. The presence and excretion of acetone is associated with certain clinical phenomena, the significance of which does not appear to have been sufficiently appreciated. I believe that some of the unpleasant after-effects and untoward results of the administration of chloroform may be avoided or combated. My results have all been obtained from a careful quantitative estimation of the acetone from specimens of the total twenty-four hours' excretion of urine, except in those cases in which either immediate operation or a fatal termination prevented it; in these cases specimens were obtained from as much of the urine as could be collected. Every specimen was examined in addition by two qualitative tests for acetone; a search was also made for diacetic acid, sugar, albumen, and casts.

Acetone is present in the urine in many different conditions, and is much more common than is usually supposed. There is so little in healthy urine, that it cannot be detected by color tests, but by a quantitative estimation a trace is generally found.

The clinical similarity of the symptoms described as occurring in so-called acid intoxication, acidosis, acetonuria, and delayed chloroform poisoning seems to point to a similar metabolic disturbance in the organism, one of the ultimate products of which is acetone, and this product occurs with the greatest regularity after the administration of a general anesthetic. I believe that a certain degree of intoxication or poisoning occurs after every surgical operation in which a general anesthetic is administered. What determines the extent of the poisoning has yet to be discovered; I am convinced, however, that its frequency and degree may be minimized by a careful choice of the anesthetic and by suitable prophylactic measures.

My conclusions are that two separate conditions should be recognized—acute and chronic acetonuria. •

That ether and chloroform invariably induce a temporary acute acetonuria which may be very detrimental even to an apparently healthy organism.

That this acute anesthetic acetonuria is accompanied by symptoms of acid intoxication, sometimes ending in death, when the kidneys are unable to cope with the increased formation of acetone by a corresponding capability of excretion.

That although ether may produce a greater acetonuria, this is less harmful than that produced by chloroform, because ether is less injurious to the cells of the liver and kidneys, and thus does not hinder their power of elimination.

That the more plentifully and rapidly excretion is carried on the less serious is the poisoning.

That the effects of the poisoning are mitigated by the administration of alkalies, which may also be given with advantage before operation if poisoning be anticipated.

That the usual risks of anesthesia are not increased by pre-existent chronic acetonuria.

That anesthesia is dangerous with pre-existent acute acetonuria, especially if the anesthetic is chloroform.

That a guarded prognosis must always be given when acute acetonuria is present with symptoms of poisoning.

That death following the administration of chloroform with symptoms of poisoning may be due to the idiosyncrasy of the patient.



J. F. Highsmith, M. D.:

I think we are bound to admit that *surgery* has accomplished more than all other remedies in the restoration of health where the *ovaries and tubes* were found *diseased* and the cause of the trouble. Just when surgery should begin and just where it should draw its lines, by this I mean whether to be radical or conservative in the removal of the tubes and ovaries, is a *question*, but from a practical standpoint in my experience as a gynecologist, I have seen great good follow in almost all, if not all, of my cases of reflex neuroses, shown to be dependent upon ovarian and tubal diseases. I have in most cases been able to diagnose by bimanual examination, the diseased tubes and ovaries before the incision was made.

My choice of route has been through the abdomen. I have preferred this for the simple reason that I felt I was in a better position to do thorough work than if I had gone the vaginal route.

As to whether I was radical, that is removed completely

the ovaries and tubes if found to be cystic with slight healthy portions, has depended to a great extent on the age of my patient. In many cases I have opened up young girls and found the ovaries cystic masses with very little healthy ovarian tissue. These cases I have done the plastic operation, that is removed the cystic material and left just a little ovarian tissue, whipping it over with catgut, preferring this to a total extirpation, as that would bring the climacteric with all the train of nervous symptoms. Where my patient was between thirty-five and forty-five, finding the ovaries badly diseased, I have removed them complete, and have had a few cases return extremely nervous, but after six or twelve months they have steadily improved, gaining in weight and strength.

The cases which have been referred to me have been those that had gone to the utmost limit of suffering before they would consent to an operation. In looking over my records, I find two hundred cases of ovariectomy of special interest occurring in my practice, and so far as I am able to learn from these cases, all have been benefited and most of them cured.



L. Kirkby Thomas, M. D.:

It is impossible for too much stress to be laid on the fact that we have in *ethyl chloride* a highly dangerous drug, and one which should not be used without the most careful consideration in each individual case, both as regards the general condition of the patient and his preparation for anesthesia. In the latter connection the very least that should be insisted on is abstinence from food for some hours previous to operation.

The so-called "safeness" of ethyl chloride lies in the smallness of the dose required to produce its specific effect. But the smallness of dose seems to me to be an element of danger, inasmuch as the range between what may be termed the proper amount and the fatal dose is much shorter than with other anesthetics with larger doses. Hence death may occur so suddenly that an analysis of symptoms immediately preceding it is impossible.

Assuming that ethyl chloride is clinically analogous to chloroform, it is logical to suppose that the same methods of administration would be available. Owing, however, to the extremely volatile nature of the former we are compelled to use closed inhalers in giving it.

Now, it is well known what an extremely small amount of chloroform is required to produce its effects when administered in this way, and it would seem that the same should apply in the case of ethyl chloride. Acting on this principle, I have for the past twelve months given ethyl chloride in the following manner:

A small slit is made in the bag of a modified Ormsby's inhaler near the neck, and on its right-hand side. This slit just admits the nozzle of a D. and F. ethyl chloride container, and closes when the nozzle is withdrawn. The inhaler is carefully applied to the patient's face, and he is instructed to take a couple of deep breaths. The nozzle is then introduced into the slit, the ethyl chloride tube being held vertically, so that c. cm. index is plainly seen; the valve is then gently pressed upon, and the fluid sprayed very slowly into the bag, till the requisite state of anesthesia is obtained.

The advantages I claim for this mode of administration are: (a) Practically complete control of the amount of anesthetic taken by the patient. In the ordinary method of throwing a definite amount on to a sponge or into a bag part escapes during the process, some becomes frozen on the sponge owing to its extremely rapid evaporation, while another portion settles at the bottom of the bag, to evaporate in a more or less erratic manner. (b) The fluid is delivered in a gaseous state. (c) The danger of overdosage is reduced to a minimum.

Having used this method in a large number of cases, I am convinced of its superiority over the haphazard but commonly accepted mode mentioned above, and have been surprised at the very small amount of anesthetic required in many of the cases.

♦ ♦

C. D. Palmer, M. D.:

Quite a number of years since, when pelvic cellulitis was not only more frequent, but more pronounced, than at the present, it was not an uncommon matter to notice, by touch and by palpation, a hard, brawny abdominal tumor, fixed under the belly wall, in the second week of the lying-in state. This mass seemed inflammatory in nature, not large in size, but oblong in shape, with borders well-defined; situated above Poupart's ligament; its highest level on a line with the iliac crest; usually

left lateral. It continued for from one to three weeks, slowly disappearing, usually without any suppuration.

Such cases were noticed not unfrequently, in the earlier years of my private obstetrical practice, in which parturition, a few days or weeks previously had been supervised by a midwife, or some physician, who seemingly had not utilized ordinary care in cleanliness. A few of these labors had been precipitous; more had been tedious, demanding manual or instrumental interference; and in most, some noticeable lacerations along the genital tract were observed. Mild septic fevers and some local disturbances were always manifest. In my hospital obstetrical experience I can recall but very few instances of this kind.

It was my judgment at these times that the aforesaid abdominal swellings were the result of some *peri-uterine inflammation of the broad ligaments*. This explanation never seemed entirely satisfactory to me, but in the absence of anything more clearly defined, it was accepted, until after some readings of Herman, when the whole matter became conclusively convincing. This swelling, commencing, as it does, at the side of the uterus, extends outwardly to the pelvic wall, then upwardly and forwardly behind Poupart's ligament, into the connective tissue, between and about the transversalis fascia and the peritoneum. The firm attachment of the peritoneum to the anterior abdominal wall is the reason for its defined shape. This cellular tissue covers the psoas and iliacus muscles, where they pass over the pelvic brim to the femur. The thigh becomes, of course, fixed and flexed in this disease.

All of the works on gynecology, to which I have had reference, either do not refer to this special feature of pelvic cellulitis, or do not attempt any explanation of this peculiar manifestation, except Herman and Roberts. Hirst, in his recent work on the diseases of women, refers, in the most explicit manner, to the ramifications of the pelvic fascia and the connective tissue, which do not appear upon dissection, but which are demonstrated by injection experiments.

It is not improbable that in those instances of this disease, pelvic cellulitis, in which suppuration occurs, and pus is discharged through the abdominal wall, the purulent formation takes place in the transversalis fascia. Otherwise, as we

know, pelvic abscesses take a downward route, and make an exit into the vaginal or rectal canal.

We must not deny the presence and the proper place of pelvic cellulitis in modern obstetrical and gynecological practice; nor are we authorized to admit it as being the most important pelvic disease with which women are afflicted, both of which statements have been made by men of authority. The present reaction of opinion, in the non-recognition of pelvic cellulitis, it seems to me, has gone too far.

The clinical differentiation of the two extra-uterine pelvic inflammations, pelvic cellulitis and pelvic peritonitis, needs always to be appreciated, and can be clearly diagnosticated. In the same way we can determine the differences between, and the movements of, pneumonia and pleurisy. An unusual amount of attention has been directed in recent years to the presence and the pathological significance of *pelvic exudates*, so-called. For reasons stated and clearly defined, these lesions are not only purely gynecological, but essentially peritoneal (pelvic) in kind; and in results involving sooner or later the fallopian tubes, and the ovaries, and the surroundings of the uterus.

The following points I desire to emphasize:

1. Pelvic cellulitis is a distinct disease.
2. Three well-defined forms of the affection may be recognized:
 - (a) Cases of para-cervicitis, in which the connective tissue about the cervix uteri only is implicated.
 - (b) Cases, involving the areolar structure of the broad ligaments, more generally the left.
 - (c) Cases, in which the infecting inflammatory action has extended, by a continuity and contiguity of structure, to the subperitoneal connective, the transversalis fascia of the abdominal wall.
3. Pelvic cellulitis is almost, if not always, an obstetrical disease, arising from obstetrical causes: septic infection of an injured cervix uteri in parturition.
4. It is, as a disease, a very much less frequent complication of the lying-in state now than formerly, because of improved methods in parturition.
5. The differential diagnosis is not difficult. The time of the occurrence of the disease, and its great tendency to be left

lateral, enable us to separate it from appendicitis. The intimate association of the para-metritic exudate, to the lateral wall of the cervix and the corpus uteri, can easily be detected by touch, as distinctly different from the sulcus there mapped out, in cases of pyosalpinx, etc. Pelvic exudates, mostly confined to the connective above and about the anterior vaginal cul-de-sac (between the bladder and the uterus), are comparatively rare, and may mislead for a while.

6. The association of pelvic cellulitis with pelvic peritonitis is, of course, to be expected quite frequently, but to a very limited extent, and in the more severe types of the disease. But the two inflammations have usually distinct existences, as their pulmonary analogues do. Neither does gonorrhea in the female, nor does faulty instrumentation induce pelvic cellulitis. Pelvic peritonitis is distinctly a pure gynecological affection.

7. The technical term para-metritis, suggested by Virchow, it seems to me, is too restricted in name to be appropriate for certain manifestations of this disease.

♦ ♦

J. W. Ballantyne, M. D.:

I will describe a case in which I delivered a *hydrocephalic fetus* by *spinal tapping*. The patient was a healthy woman, forty-six years of age, who had previously given birth to an anencephalic fetus. There was a moderately contracted pelvis, with a breech presentation. The abdomen was greatly distended; palpation revealed nothing like a hard fetal head, but rather a general, even, and rounded swelling extending up to the ensiform cartilage, and fluctuation could be indistinctly felt. Some difficulty was experienced in bringing down the feet and legs, and still greater difficulty in dragging the arms through the brim. I then observed that there was a ruptured spina bifida in the lumbar region, and from this fact, as well as from the former history of the birth of an anencephalic fetus, and from the large size and peculiar feeling of the uterus, I came to the conclusion that the fetal head was hydrocephalic.

Traction was made upon the body, but the head could not be drawn through the brim. Perforation would have been difficult because the pelvic brim was narrow and the head quite above it; but in this case there was no thought of attempting delivery by perforation. Instead of this the fluid was drawn off by passing a male silver catheter through the opening in

the spinal canal made by the spina bifida, up the canal, into the cranial cavity. As soon as the tip of the catheter was felt to be lying free in the cavity it was moved about in order to insure reaching all the parts of the hydrocephalic sac. The fluid flowed freely, and in a few seconds the bones of the collapsing head could be easily felt through the abdominal walls. The head was then drawn with some difficulty through the contracted pelvic brim and the birth was rapidly completed. In this case I made use of the teratological opening into the spine, but in a case which I previously reported I made an opening in the upper dorsal region, and I would have done so in this case if there had been any difficulty in reaching the cranial cavity.

In order to reach the fluid I think it probable that a metal rather than a rubber catheter must always be used. The operation of tapping, as thus conducted, fulfills the object of overcoming a grave obstruction existing above the pelvic brim by means of a simple operation performed outside the vulva.

Another interesting point about this case is the previous obstetric history of the patient. She had given birth first to a female child, which had died *in utero* long before expulsion; second, to a female anencephalic fetus, the labor being complicated by marked hydramnios; third, to a living male child; fourth, to a hydrocephalic fetus, as described above. I am strongly of opinion that the association of the two teratological conditions was not coincidental, but was relational in this patient, and that she was the subject of "recurrent monstriparity." In this recurrent monstriparity there seems to be a tendency to give birth to malformed infants rather than to infants with any special malformation, and there seems to be a sex preference, the female children being malformed more often than the male ones. Further, although the monstrosities may not be similar in appearance, there is a resemblance in origin. In this case, for instance, hydrocephalus, spina bifida, and anencephalus are all malformations of the nervous system, and they probably all originated in the same way.

♦ ♦

Emil Ries, M. D.:

Thanks to the heroic industry of gynecologists of various countries, the investigation of *carcinoma of the cervix* has recently made the most brilliant progress.

Our old ideas of the pathology of this disease were erroneous in so far as they assumed that the advance and spreading of carcinoma of the cervix was different from that of other cancers. We know now that carcinoma of the cervix, like other carcinomas, is liable to invade early not only the connective tissue surrounding the primary seat of the cancer, but also the regionary lymphatic glands. The microscope alone can determine whether connective tissue and glands are invaded or not. Enlarged glands may be free from carcinoma, infiltration of ligaments near the cancerous cervix may be inflammatory and nothing more, whilst small glands and ligaments quite supple and normal according to touch may be full of cancerous elements. The size of the primary cancer is no reliable criterion of the lymphatic invasion, and this invasion follows, with more or less regularity, certain paths. In short, carcinoma of the cervix behaves exactly like other cancers. Therefore carcinoma of the cervix must be submitted to the same treatment which is generally accepted as the only scientific and safe course in cancer of other regions of the body. It is only by an abdominal operation including a thorough anatomical dissection, and not a mere search for glands, that the surgeon can insure the patient against recurrence.

The complete operation is of necessity tedious, difficult, and dangerous, but the mortality has been increased because operators have undertaken advanced cases quite beyond the aid of surgery. On the other hand, the "reduction" or modification of the radical operation means, among other things, that the operative mortality sinks, but recurrences rise up to the old rate of preradical days. The advocates of this modified radical hysterectomy seem proud of declaring that it can be done within forty minutes—a space of time far too short, in my opinion, for allowing of complete dissecting away of diseased glands. They further make out that the proportion of cancerous glands in an average case of cancer of the cervix is small—a misleading conclusion, because the fact that few glands are removed in "modified" operations does not prove that no infected ones are left behind. In short, "while radicalism mitigated and tamed is rewarded by a low operative mortality, ultimate failure of the whole work is invited." In conclusion I insist that our duty towards the carcinomatous patient must be to attain the greatest possible protection from the return of the dis-

ease rather than to minimize the interference. The vaginal operation, which many surgeons can perform with admirable dexterity and with temporarily good results, cannot represent anything like an approach to perfect surgical treatment, since cancerous glands exist in over a third of apparently operable cases. In the abdominal operation it is useless to remove only such glands as are enlarged when small and soft glands left behind may be cancerous. As for igni-extirpation by the vaginal route, not only has it all the disadvantages of vaginal hysterectomy, but, as Ries points out, the father of the method has abandoned it in favor of the abdominal operation.

♦ ♦

Reed Burns, M. D.:

It is the object of this paper to present briefly the treatment which has given the writer the best satisfaction in the more common diseases in which we meet with *pus in the abdomen*.

In empyema of the gall bladder my best results have followed cholecystectomy. We may look upon every gall bladder containing pus or stone as a diseased organ. When we attach it to the abdominal wall for drainage, it becomes a functionless hollow band. If the cystic duct is occluded we must have a mucous fistula or trouble will follow. For the past five years I have removed every gall bladder that I have operated on for pus or stone but one, and that patient is still going about with a mucous fistula.

In acute salpingitis many teachers advise waiting till the pus has lost its virulency. My best results have followed prompt operative interference, unless the attack is too mild to warrant it. The ravages of the disease are less and the post-operative condition of the patient is better. I believe the danger of operating during the acute stage of salpingitis is imaginary.

In chronic salpingitis, ovarian abscesses, circumscribed collection of pus in the pelvis or other parts of the abdomen, whether from puerperal sepsis, salpingitis, perforation of hollow viscera, or any other cause, my best results have followed thorough, complete, but careful work. All adhesions are broken up, pus, blood, and filth washed out, tubes and ovaries removed if need be, and then gauze packing or glass drainage or both used as the cases may require. Some cases can be closed without drainage.

In circumscribed appendicular abscess with adhesions to the abdominal wall, we may be able to evacuate the pus without at first opening the general peritoneal cavity. I used to stop at this point. I now, with very few exceptions, after washing out the pus, open the peritoneal cavity above or below the adhesions, separate all adherent surfaces, remove the appendix and diseased omentum if present, repair bowel if necessary, investigate the general peritoneum, particularly the pelvic cavity, and finish with gauze packing, gauze coffer-dam or glass drainage as the case may require. By this method my mortality is less, the troublesome post-operative sequelæ are markedly diminished, and the period of convalescence is shortened.

In appendicular abscess without adhesions in front, the treatment is the same except the separation of adherent surfaces from the abdominal wall. When there is pus free in the peritoneal cavity, the incision is usually made in the median line and long enough not to handicap the operator. If there is extensive peritonitis with or without distention and a liberal quantity of pus or sero-purulent fluid in the abdomen, it is best to let the small intestines escape from the cavity, then thoroughly wash out with sterile salt solution or plain water, using a douche apparatus that allows the water to flow through it rapidly; then if the small intestines are distended, incise transversely, strip the contents and close the opening, then remove the perforated appendix or leaking tube as the case may be.

In cases where the appendix is easy of access and the field can be kept reasonably clean, the appendix is removed before eventration and flushing are practiced. If patches of fibrinous exudate are scattered over the bowels, this should rapidly be removed with gauze before the intestines are returned. Too much time should not be wasted in this effort as its entire removal is often difficult and unnecessary. After this work is done all superfluous water should be removed from the abdomen. In the great majority of cases the wound can be closed with a single glass tube in the pelvis and the patient placed on a horizontal bed.

To those who have not seen or practiced this method, it may seem too hazardous. In competent hands it is not, but it requires practice to do it well.

The separation of adherent surfaces in the abdominal cavity

requires a knowledge of anatomy, a cool head, and practice. No one can learn it from a teacher; each operator must learn to do it by himself.

The opening in the abdominal wall from which the water escapes in douching should always be kept free to prevent wider dissemination of septic matter.

◆ ◆

Ernest Brice, M. D.:

In the matter of treatment of *puerperal convulsions*, Galabin wrote, in 1891:

"No time should be lost in inducing labor, since nothing exercises so favorable an influence as the completion of delivery, both as regards the convulsions and the condition of the urine."

Fifteen years have passed, and now doubt seems to be thrown upon the efficacy of this method. Why, it is difficult to say.

One can understand a new view of the pathology of a disease, or the discovery of a more effectual remedy altogether affecting our course of action, but of the pathology of *puerperal eclampsia* we have no more definite knowledge than we had twenty years ago, nor can we offer any better method of conducting a case. Yet the methods with which our forbears were successful are now being brought into question, and by some we are advised practically to leave things alone, "as we are as likely as not to do more harm than good by interference," but it is hard to believe that the non-interference policy embodies the result of the experience of the whole body of the profession. It would be very helpful if the general practitioner could be induced to give his experience.

In thinking over cases of my own, I have in my mind six, in each of which relief followed the birth of the child. I have not an exact record of the cases, as notes were not taken at the time, but one fact is very plainly stamped upon my mind, and that is that the convulsions were always relieved after the evacuation of the uterus.

To my mind, the course of treatment in every case of *puerperal eclampsia* is clear and definite. First, try to control the convulsions by the administration of chloroform (I have never found difficulty in getting the patient under the influence of chloroform; in the various convulsive movements of the mouth and chest enough is drawn into the lungs to produce the desired

effect). If the convulsions pass off, well and good; if not—you cannot keep the patient indefinitely under the influence of the drug—and labor does not soon ensue, then induce delivery. For the latter purpose I prefer Nature's instrument—the human finger—as much the safest, for it is endowed with sensation, and knows what it is doing, and is, moreover, effectual earlier than any other form of dilator. If it is impossible to commence the dilatation with the finger, the sound may be used to start the process, there being no time, of course, to wait for the action of tents.

♦ ♦

John G. Clark, M. D.:

I shall take up the subject of *abdominal drainage*. This question has especially interested me for the last ten years, and I have passed through its two opposite phases; first, the extensive use of the drain is of signal value; second, the use of the drain, unless it is urgently indicated, may do more harm than good.

In general there have been three methods of drainage employed: (1) The glass tube, which was extremely in vogue ten to fifteen years ago; (2) Mikulicz's gauze pouch drain; (3) simple tampons of strip gauze. More than ten years ago I began the study of a large series of abdominal cases occurring in the gynecological wards at the Johns Hopkins Hospital. This study was begun with the intention of proving the superiority of Mikulicz's drain over the old-fashioned glass tube, for our experience with the gauze drain had been so much more satisfactory as to cause us to consider it of vital value in promoting the safety of cases after operation. With a view of proving this theory I made a close study of seventeen hundred cases, but as the study progressed I gradually changed from the first position of which I spoke in the beginning of this discussion to one of neutrality, for there were several points which came into the foreground and began to arouse the suspicion that all forms of drainage as then generally used all over the country were open to serious objections. It was found that the stay of the patient in the hospital was prolonged, and that persistent fistulas, hernia, suppuration of the wound, intestinal adhesions leading to considerable colic, irritation of the bladder, and post-operative deposits in the pelvis were all noted more frequently after the use of the drain than in cases in

which this was not employed. And in the last hundred cases, *none* drained, there was but four per cent. mortality and five per cent. suppuration.

From the results I could draw but one unalterable conclusion; the drainage which was employed in a large proportion of the earlier cases had not only been useless but was conducive to a greater morbidity, with also the grave question of whether the mortality had not actually been increased. Certainly morbidity in the sense of convalescence and comfort of the patient was very decidedly increased by the introduction into the peritoneal cavity of these foreign bodies.

Since studying the anatomy of the peritoneum and the function of this large lymph sac, which is capable of absorbing such an excessive amount of fluid, I am quite willing to trust to the absorption of a reasonable amount of débris, provided it is in a fine granular state. My opinions as to drainage are very radically fixed in favor of its limitation to the smallest number of cases. On the other hand, however, I am a radical advocate of drainage in a given class of cases. These classes, as I have repeatedly stated, are as follows: (1) In appendicitis when gangrene has taken place, and the integrity of the suture is jeopardized, also where there is a localized abscess shut off from the peritoneal cavity, or in cases where general peritonitis has developed: (2) localized collections of pus in the pelvis, which are simply opened and drained, or in which enucleation has not been completed and part of the abscess sac is left behind; (3) in the suture of a viscus in which the integrity of the suture is in doubt; (4) in excision of an old fistulous tract leading from the intestine to the abdominal wall; (5) purulent peritonitis.

For a number of years I have constantly used normal salt solution as an intraperitoneal infusion in a large series of cases with two viewpoints: (1) To promote absorption; (2) to increase the peritoneal leucocytosis, as is constantly done in laboratory experimental work.

♦ ♦

John Irving, M. D.:

The statement that there is no such thing as *painless labor* is contrary to my experience. About sixteen years ago a lady engaged me for her fourth confinement, and incidentally mentioned that all her children, including the first, had been born

before the doctor's arrival. I noted this, mentally resolving to be in time. It was in vain. Within ten minutes after receiving the summons I was at the patient's bedside, but the infant was born. To my astonishment I learned that she had never yet experienced what are known as "labor pains," nor did she ever suffer "after pains." Eighteen months later she wanted me again. One evening she and her husband with a couple of friends were enjoying a game at cards, when she suddenly told her husband to fetch the doctor while she went upstairs. As before, ten minutes probably covered the interval between her rising from the table and my arrival, and again I found the child born. A third opportunity in due time was given me to attend this lady, but as this proved to be a twin pregnancy I was in time to witness the birth of the second child, the first having appeared on the scene before I could reach the house. All through there were no pains, no warnings of impending accouchement until birth was almost accomplished—no complications or after discomfort of any kind. This patient informed me that her sister, the mother of several children, was likewise fortunate in absolutely escaping the pains which usually accompany labor.

♦ ♦

H. R. Spencer, M. D.:

I will describe a case of *ovariotomy performed during labor*. The patient was a primipara, aged twenty-four, who was admitted to University College Hospital three weeks after tapping of the abdomen had been carried out at a lying-in hospital; she was a little more than eight months pregnant. When first seen at the hospital, the patient's abdomen was enormously distended and measured forty-seven inches in circumference. The measurement from the ensiform cartilage to the umbilicus was thirteen inches, and from the pubes to the umbilicus twelve inches. The greater part of the abdomen was occupied by a thin-walled cyst, dull on percussion, and giving distinct evidence of fluctuation; the outline of this cystic tumor could not be distinctly made out. The pregnant uterus could be felt as a firm tumor in the lower part of the abdomen on the right side. The os uteri admitted two fingers; the head presented low in the pelvis. Contractions could be felt per vaginam from time to time. The case was diagnosed as a large and probably ruptured ovarian cyst complicating labor. An opera-

tion was decided upon, but was not performed until later on in the labor, when strong pains had been felt for about an hour. At the operation the tumor was found to be a multilocular cyst of the left ovary, ruptured at the lower part so as to permit of the escape of fluid into the peritoneal cavity. The cyst was removed and every precaution taken against hemorrhage from the stump, the pedicle being tied in two and as a whole with floss silk, and the ovarian being afterwards understitched, while the peritoneum was drawn over the raw surface. After the abdominal wound had been closed a vaginal examination was made, and showed the cervix to be fully dilated and the head low in the pelvis. Forceps were applied, and a strong and living female child was delivered. The placenta was expressed a few minutes later. There was no *post-partum* hemorrhage. The whole operation, including the delivery, lasted seventy minutes.

A point of interest in this case is the tapping to which the patient had been subjected before admission to the hospital. On this point experience has only strengthened the opinion I expressed twelve years ago, that "the tapping of ovarian cysts, unless they are undoubtedly malignant, or unless the patient is suffering very acutely from some pulmonary affection or grave general disease independent of the tumor, is in my opinion an unjustifiable procedure."

The second point of interest is the treatment to be adopted in the case of a patient in labor who has a large ovarian tumor which does not obstruct delivery. The three alternatives are: (1) To deliver by the natural passage, dilating the canal if necessary, and then to perform ovariectomy; (2) to perform ovariectomy, and leave the delivery to nature; (3) to perform ovariectomy at the end of the first stage of labor, and immediately afterwards to deliver by forceps while the patient is under the anesthetic, the course adopted in the case here recorded. Each of these three methods has advantages peculiar to itself; by the first method the injurious effects of the anesthetic on the fetus are avoided, and the operation of ovariectomy is facilitated; by the second the maternal and fetal injuries common in instrumental deliveries are avoided; by the third the ovariectomy can usually be performed with more complete asepsis than just after delivery, the risk of rupture of the large cyst during labor is lessened, and only one administration of the anesthetic is, as a rule, required.

Henry P. Taylor, M. D.:

During the fifteen years since I graduated I have attended 495 confinements. Of these, twenty-five per cent. were *occipito-posterior positions*, mostly in primiparæ.

At first I experienced great difficulty in making out the position of the head, but since I adopted abdominal palpation in addition to the usual vaginal examination I have found diagnosis easy and sure.

As regards treatment, which is of greater consequence than theory, I hold that delay is not quite fair to the patient, as it wears out her patience and strength, and worries her. It is a source of very great anxiety to the relatives, and little assistance to the attendant physician. In these days people look to a medical man for help, and resent procrastination. It is only fair, however, in support of the advice to delay, to record the fact that in this remote district fifty years ago, the obstetrical equipment consisted of a testament and a razor; the former was read at intervals to cheer up the patient and pass the time, while the latter was placed underneath the pillow to keep away the witches. Delivery usually took place after suffering two or three days. I have been told that women with their first child often "suffered three solid days," when "the head was born at the back."

My method may not be quite orthodox, but I have always found it successful, inasmuch as I have been so fortunate as never to have lost a single confinement case since I commenced practice.

In parchment os, if I get a history of pains for twelve hours, I give chloroform, thoroughly and fully dilate the os with my fingers, and leave the case to Nature for from three-quarters of an hour to an hour. If there is then no advance of the head, I rupture the membranes, deeply anesthetize, apply axis traction forceps, and in a leisurely manner get the head down to the perineum, slacking off the screw between tractions to allow the head to mold itself, and permit rotation if such is to take place. I then allow my patient to recover from the anesthetic, assist delivery slowly and carefully, rather retarding and guiding the emergence of the head than pulling it, giving a "whiff" of chloroform when a pain begins. By these means I prevent, or at least minimize tearing, so that if it does happen, it is gen-

erally so slight as to need no suturing. Slight tears, I think, are best left alone.

I allow my patient to recover from the chloroform, because I attribute my only case of *post-partum* hemorrhage to delay in the first stage, and deep anesthesia during delivery of a child in one of these occipito-posterior positions.

Personally, I consider turning for occipito-posterior positions unnecessary, pressure on the front of the head useless, and artificial rotation of the head impossible in most cases. Where one succeeds in the latter procedure I imagine it twists the child's neck to a considerable extent, because the trunk does not turn at the same time, and one would really need to make nearly half a turn before the head could be made to occupy an occipito-anterior position.

I cannot enter into the theory of occipito-posterior positions. Pregnancy being one of the most natural processes in Nature, my belief is that probably in a multipara the child may have more room for movement than in a primipara, and so Nature seeks to adapt the child to the easiest mode of exit, which is either the first or second position. I believe a child to have considerable freedom in a multipara during the later months of pregnancy. One case to which I was called—a woman in her sixth pregnancy—was troubled with nocturnal pains during the eighth month. On examination, I with difficulty detected a hand. At the ninth month she was easily delivered, the head having descended and occupied the first position.

Translations.

The Curette and Abortion (Monats. f. Geb. u. Gyn.).—There was recently much discussion at a medical society in Düsseldorf about two bad cases of damage caused by the curette employed to remove placenta after abortion. In neither instance was there any suspicion of criminal induction of abortion, but the second case serves as a warning against attempting any "minor" obstetric surgery on an unruly patient not under anesthesia. Merttens brought the cases forward. The first patient aborted in the second month, and bled freely. A practitioner attempted to remove the placenta, and succeeded in getting it away manually, but not entire. He introduced the

curette, and was surprised to find the uterine walls so relaxed, as far as he could make out. Suddenly hemorrhage set in, and as the doctor passed his finger beyond the cervix he fancied that he could feel something like a fibroid. At once he irrigated the uterus with lysol, which caused immediate collapse and cessation of the hemorrhage. Merttens saw the patient two hours later; she was pale, but the pulse was about 90 and fairly strong. Two fingers could be passed into the os externum, the cervix was much relaxed, but the body of the uterus was firmly contracted on the top of it like a cap. Digital exploration caused intense pain, especially when the finger was pressed against the posterior uterine wall, where a transverse laceration was detected. This laceration allowed of the passage of the finger as far as the promontory of the sacrum. As there was no more hemorrhage and no great danger of infection the patient was kept at rest, and she made a good recovery. The uterine wall, firmly contracted on the cervix, had been mistaken, first, for a piece of the placenta, and then for a myoma. The relaxed condition of the cervical tissues rendered perforation easy.

The second case was far more serious. Much bleeding followed the expulsion of the ovum, the abortion occurring about the fourth month. The doctor, greatly alarmed, attempted to remove the placenta with the aid of the curette, but the patient would not lie still. He fixed the volsella to the cervix, and then succeeded in getting away a fibrinous mass with the curette, when the patient became very unruly, so that the volsella, which she caught hold of and pushed upwards, did great damage. The doctor could only make out that there was great hemorrhage, and that almost the entire anterior lip of the os externum was torn off. Acting wisely, he sent the patient into hospital, but there was a delay of several hours. Merttens found very severe injuries; there was a rent above the lacerated anterior lip forming a communication between the cervix and the bladder; fetid bloody urine escaped when the exploring finger was withdrawn. The internal os was apparently contracted, but the finger could be passed into the uterine cavity, and some fragments of placenta were discovered. In the anterior wall was a large rent through which the finger could be introduced into the peritoneal cavity. The uterus was removed entire, and the bladder, which could not be repaired by suture, was drained. The patient died on the second day. Merttens considered that the curette was a dangerous instrument when employed on the gravid uterus even by an expert; he himself always used the finger alone for extraction of placental relics. In exceptional cases, when the curette was needed, it should never be introduced except through the speculum.

Dr. Ruhle of Eberfeld was of opinion that there was a great deal too much curetting after abortion; the finger was always sufficient when the placenta was fairly developed, as in these two cases. The mania, as Ruhle termed it, for curetting was traceable to Dührssen's teaching that routine curetting insured immunity from hemorrhage, and speedy convalescence. Dr. Becker of Düsseldorf observed, very reasonably, that when the curette is taken in hand by a medical man of any class it must be properly used with all precautions, just as in the wards of a medical school. The patient must be placed in the right position, and the operator must empty the bladder and most carefully ascertain the relations of the uterus by bimanual palpation. The patient must be kept well under the influence of the anesthetic, the cervix, after the introduction of the speculum, should be fixed and steadily dilated, and then the largest possible curette employed to empty the uterine cavity, if the finger be not sufficient for the purpose. Even with these precautions perforation may occur. No doubt it is absolutely unjustifiable to use the curette in the dark, with a struggling patient lying on her side, even if she can be kept in that position, but the instrument must not be blamed for any evil results following such bad practice.

Surgical Treatment of Gastro-Colic Fistula.—Chavannaz (Bull. et Mém. de la Soc. de Chir. de Paris), who has recently operated in a case of gastro-colic fistula, discusses the different methods of surgical intervention for the treatment of this condition. Although such intervention is of quite recent date and only eight instances have been hitherto recorded, it has been practiced in several very different ways. Exclusion being made of those cases in which a simple exploratory laparotomy was performed, and also of those of incision of a circumscribed peritoneal abscess communicating with both stomach and colon, it will be found that four different methods of operation have been practiced for radical cure or for relief on the subjects of gastro-colic fistula. The surgeon, it is pointed out, has acted directly on the fistula by performing laparotomy, separating the stomach from the colon, and closing the abnormal orifices after simple refreshing of the margins, or after gastric and intestinal resection.

The second method, which aims at exclusion of the portion of large intestine adherent to the stomach, has been varied according to the indications for making this exclusion either complete or incomplete; one procedure consisting in section and closure of the colon above and below the fistula followed by re-establishing of the continuity of the large intestine, the adherent portion of the colon being transformed into a simple gastric diverticulum; the other procedure in the setting up of a simple intestinal, usually colo-colic, anastomosis.

The other methods practiced merely as palliative operations have been jejunostomy and colotomy on the proximal side of the gastric fistula. In one only of the eight collected cases was the patient treated by direct closure of the fistula. The operation, which was a very long and difficult one, had a fatal result.

Of three patients who were treated by exclusion of the adherent and perforated portion of colon, and re-establishing of the continuity of the intestinal canal, two were completely cured and the third was considerably relieved. Simple intestinal anastomosis, which was practiced on two patients, gave very good results in one case and failed altogether in the second. Colostomy did no good in the single case on which this operation was performed, and in the remaining case jejunostomy resulted in decided but only temporary relief. The author concludes that the surgeon in dealing with a case of gastro-colic fistula should in his choice of one or other of the proposed operative methods, be guided by the general condition of the patient, the nature of the symptoms, and the origin of the fistula. If the patient be still able to tolerate operative intervention, laparotomy should be practiced in order that as much information as possible may be gained of the nature and extent of the lesion.

In a case of simple fistula without extensive changes in the surrounding tissues—a condition which is acknowledged to be exceptional—the surgeon might practice the first of the above-mentioned methods—that of resection and suture. In the presence of extensive and firm adhesions complete exclusion of the affected portion of colon should be attempted if the patient be in good condition, but if there be much exhaustion the surgeon should not attempt more than a simple lateral anastomosis. If a long operation, with the administration of a general anesthetic, be contra-indicated by the enfeebled state of the patient, it would be advisable, the author states, to perform jejunostomy. The choice between this operation and intestinal (colocolic) anastomosis is likely, it is pointed out, to be a very difficult one. The former would probably be best suited for badly-nourished and debilitated patients, the latter for those affected with fecal vomiting.

Ocular Complications of Pregnancy.—Berger and Loewy have recently published an interesting account of ocular symptoms in various diseases of the reproductive system, and those constituting the complications of pregnancy in particular (Paris: Félix Alcan and *Journ. de Méd. et de Chir. Prat.*). In the writer's opinion 1.5 per cent. of pregnant women suffer from some defect or disease of the visual apparatus. Some, such as pigmentation of the lids, are of no clinical importance. The lachrymal gland may secrete abnormally; a case is quoted

of a primipara who suffered during the first two months from ptyalism and mucous vomiting—at the third month there was a copious secretion of tears, causing considerable discomfort. Ulceration of the cornea in pregnant women has been frequently observed. The ulcers are situated, as a rule, at the center, are independent of traumatism, and appear to be trophic in origin. Conjunctival hemorrhage appears to be the result of vomiting. The intrinsic muscles are liable to paralysis, and a case of unilateral mydriasis is quoted, which appeared ten weeks before delivery, and was present seven months after. The muscles of accommodation show weakness, in some cases as early as the first two or three months, and glasses become necessary. This is usually attributed to general weakness and nutritional defect; the symptom generally disappears after delivery, though it may remain for some months. Sometimes the muscles of accommodation are completely paralyzed. Glaucoma has occasionally appeared during pregnancy; cataract, unilateral or bilateral, has appeared during pregnancy, becoming aggravated on each successive occasion. It is independent of glycosuria or albuminuria.

Optic nerve and retina: Asthenopia, due to malnutrition of the optic nerve and retina, is frequently present in pregnancy. Retinal anesthesia also occurs, and it is well known that towards the end of utero-gestation hemeralopia occurs. It is, however, suggested that this symptom may depend on deficient hepatic function, and therefore be indirectly due to pregnancy. Sudden or prolonged exposure to light may be the immediate cause of hemeralopia, as in a case recorded by Kutsner. Hemeralopia is occasionally accompanied by general diminution of visual acuity. Temporary blindness occurs in connection with icterus gravidarum. Lutz records a case of a woman aged thirty-seven who developed severe jaundice with subcutaneous hemorrhages during the eighth month of pregnancy. Complete blindness supervened before delivery. Vision improved slightly, but the patient died two days after, the child being born before term. Landesberg describes a case of sudden loss of vision in association with jaundice of four days' duration. The writers are of opinion that amaurosis in these cases is due to the action of toxines acting presumably on the cortical centers. Neither Lutz nor Landesberg was able to detect any fundus changes in their cases. Bose has examined the fundus oculi of a large number of pregnant women. There were redness of the optic disc, dilatation of the veins and occasionally slight papillitis without any subjective alteration of vision. Optic neuritis and retrobulbar neuritis have been known to occur during pregnancy. The latter usually develops about the fourth or fifth month, is generally bilateral, and reveals itself by central scotoma or amblyopia, the intensity of

which varies. Relapse is probable in subsequent pregnancies. The vision occasionally improves before delivery, but has been known to persist for some time after. Cases have been recorded of persistent amblyopia, sometimes unilateral, recovery taking place in the other eye. Loss of sight in the one eye, with contraction of the visual view in the other, has been described.

The writers refer to an interesting case published by Lawford Knaggs, in which, after each succeeding pregnancy contraction of the visual view occurred, corresponding to the loss of a quadrant, therein resembling contraction in sectors in the visual field met with in cases of optic atrophy in association with menstruation. In an interesting case described by P. Bull, there was aggravation of bilateral contraction during successive pregnancies. Amblyopia appeared during the second month and progressed till the patient was completely blind. Vision was restored six months after delivery. During the third pregnancy blindness was complete by the fifth month, and only partially disappeared after delivery. The same symptoms supervened with the fourth pregnancy, but after delivery there was perception of light only in the right eye, the vision being one-sixtieth in the left. Optic atrophy was detected. A further interesting point connected with this case was the absence of tears on crying. The latter phenomenon has been met with in hysteria and in cases of optic atrophy of tabetic origin in women. The clinical importance of these lesions is great, as it may be necessary to induce abortion. The patient should be made aware of the risk to vision in subsequent pregnancies. At the same time it must be remembered that optic atrophy may be due to other causes than pregnancy in women. Abortion under such circumstances may not be followed by improvement. The differential diagnosis between hysterical amaurosis and lesions of the optic nerve in pregnancy should present little difficulty, owing to the presence of other stigmata of hysteria and the absence of changes in the fundus. Retinal changes are found in pregnant women without the presence of albuminuria. Sometimes extensive scotoma suddenly develops, caused by effusion of blood. Detachment of the retina is rare.

Ocular muscles: Pregnant women not infrequently develop muscular asthenopia, which may require correction by suitable prisms. After delivery the symptom generally disappears. The internal recti are the most commonly affected, but Altman records a case of paralysis of the right external rectus. Pulsating exophthalmos has been known to occur in pregnancy.

Uremic amaurosis: This symptom may occur in the latter half of pregnancy, sometimes during labor. The onset is usually sudden, and loss of vision is complete within a few hours or a day. Sometimes perception of light is retained. The con-

dition is always bilateral, and headache, vomiting, loss of consciousness, and convulsions usually follow. The patient may become comatose. The amount of urine is reduced and albumen is present. The pupils are either normal or dilated, and may retain their reflexes, which is a favorable indication. There are usually no fundus changes, though albuminuric retinitis may be present. The duration rarely exceeds twenty-four hours. The vision may be completely restored provided the patient recover from the other symptoms. This form of amaurosis tends to relapse, and may then be followed by contraction of the fields. Attacks of uremic amaurosis have no effect on the progress of albuminuric retinitis.

Villous Tumors of the Fallopian Tubes.—Tédenat (*Archives Provinciales de Chirurgie*) states that tumors, whether primary or secondary, of the fallopian tubes, though less frequent than tumors of the uterus and ovaries, are not at the present time to be regarded as rare or exceptional varieties of morbid growth.

The existence of primary growths was barely recognized before 1890, but since this year a greater care in pathological examination of the uterine annexes, and the frequent practice of laparotomy in uterine surgery have furnished a fair and rapidly-increasing number of specimens of both cancerous and benign growths of the fallopian tubes. To this list the author adds three cases, one of branching papilloma of both tubes, the second of villous tumor of the right tube with papillary cyst of the corresponding ovary, and the third of villous growths of both tubes; in all of which complete castration was practiced with good results.

In discussing the pathological histology of tubal papilloma he points out that in this region as in mucous membrane elsewhere, and in the external integument, the growth is often the result of irritation, and may be occasionally due to the action of the gonococcus. The growth presents the form in some cases of a typical adeno-papilloma, in other cases of an adenocarcinoma. The epithelial proliferation in these growths of the fallopian tubes, as in other parts lined by mucous membrane, seems for a time to consist in an ordinary irritative process, and whether presenting the papillary or the glandular type, so long as there is not any excessive multiplication of cells, and these cells preserve a cylindrical form and are arranged in a single layer, the neoplastic formation may be regarded as benign. On the other hand, when the cells multiply to excess, when they become misshapen and atypical and infiltrate the layers of the tubal wall, the growth acquires the form of a malignant tumor.

The diagnosis of tubal papilloma has, it is stated, never been

made before exposure in an operation performed in most instances for supposed pyosalpinx.

The only effectual treatment when an accurate diagnosis has been made is total utero-annexial castration, such radical measure being indicated by the following pathological data: (1) both tubes involved in 25 per cent. of cases; (2) grafts in the uterus in 10 per cent.; (3) frequent extension of the growth to the lateral angle of the uterus; and (4) frequent invasion of the broad ligament and the paracervical glands by nodules of the new growth. For these reasons it is necessary, it is held, to perform abdominal hysterectomy with a free dissection, and as wide an excision as possible of the parametric tissues.

The author has thus obtained excellent results in two cases, one patient being free from relapse five years and the other nine years after the date of the operation.

In cases of malignant growth the prognosis is very unfavorable, relapse taking place in a large majority within the first year. It is possible that free removal of the uterus with the diseased tubes and wide excision of the parametric tissues may improve the results of operative treatment, but the records of abdominal hysterectomy applied to cancer of the uterus do not, it is pointed out, favor very sanguine expectations.

Gold Sutures in the Radical Treatment of Hernia.—Vecchi (Morgagni) deals specially with gold-wire sutures in hernia. He gives the results of Lansini's cases of radical treatment, the method employed, and his own experiments on the antiseptic properties of gold. In modern hernia operations he asserts there are 4 or 5 per cent. of cases of suppuration. Whether early or late, such are cases of stitch abscess, and raise the questions as to the best material for sutures. As catgut is weak, it is necessary to use thick strands, which are difficult to sterilize, and, owing to their thickness, may lacerate the tissues, and, though sterile, may so cause abscess; also it cannot be foretold how soon catgut will become absorbed or firm union take place. Silk can be better sterilized, but frequently, after everything appears healed, necrosis of tissue with suppuration is set up. Removable sutures permit outside influences to penetrate deep in the wound, and may cause widespread suppuration. Sutures from the fibers of the human body, "autoplastic," an organized and septic material, has in the inventor's hands given good results.

Hitherto silver only has been used as a metallic suture; in cases of hernia it must be thick, and so may injure the tissues. A mixture of catgut and silver intensifies the bad qualities of both substances. Gold, which resists chemical agents, is proof against common acids and alkalies, and can be heated to 1000° without alteration. It is unsuitable for the life, and prohibits the growth, of micro-organisms. That it can be drawn out

very fine, whilst retaining sufficient strength and great flexibility, is one of its manifold advantages. Credé's treatment of wounds by silver was founded upon a bacterial power it possesses in common with, though somewhat stronger than, gold.

Vecchi made several experiments, which, whilst proving the bactericidal power of metals, showed the inhibitory action was stronger in the case of either silver or copper wire than gold. He used various micro-organisms—viz., diphtheria bacillus and staphylococcus—which at first grew rapidly, then ceased. Wire was embedded in agar plates, in which colonies grew almost up to, but left a narrow sterile zone around, the wire. In a further experiment on rabbits each animal was inoculated with staphylococci from a phlegmonous suppuration by a loop of silk in one ear and a loop of gold wire in the other ear, both being left in the wounds. Suppuration quickly followed the silk, but after slight and transient inflammation the gold wire became encysted. A careful calculation of all factors will prove that in hernia operation gold wire is cheaper than catgut.

Reference to Lansini's cases shows that he has invented and uses a special set of hernia instruments, and that it is a *sine qua non* that the hands of his assistants should not come in contact with the wounds. For the margins of the wounds he uses retractors, with heavy curved handles, to depress the bottom of the wound, a long-handled spatula, and a heavy self-acting hook for the spermatic cord. The diameter of the wire used by him is, for tying the neck of the sac and deep sutures, 0.3 millimeter for the sac itself and superficial sutures 0.2 millimeter. Prior to the above procedure he had suppuration in 5 per cent. of his cases, but in 300 operations since he has only had one slight case in private practice, which explains itself by the unfavorable circumstances under which it was carried out. The author gives other cases which strongly support his contention.

The Etiology of Eclampsia.—Von Liepmann (Mün. Med. Woch.) publishes a series of interesting experiments performed with a view to determining the etiological factor in eclampsia, and they have considerable bearing on the treatment of that condition. He took a normal placenta, crushed it up in a machine, dried it, and then reduced it to a fine gray powder. One grain of this powder was dissolved in salt solution, and used for intraperitoneal injections into rabbits. The result in nearly every case was that the animals remained very quiet for some time after the injection, and then recovered without untoward symptoms. The placentæ from eclamptic patients were treated in the same way, and one grain injected into rabbits. The animals remained quiet at first, but after a few minutes they became restless, there was retraction of the head, in some

cases tonic and clonic movements of the masticatory muscles were noticed, and finally the animals became comatose, with the head lying loose between the fore-limbs. Death supervened in most cases under twelve hours. Thus the eclamptic placenta contains a substance which the normal placenta does not, and this substance is toxic to rabbits.

Further, the placenta from a patient who has had many fits is less toxic than one from a patient who has only had a few, which means that the toxin has passed out of the placenta into the system in greater quantities in the first case than in the second. The amount of albumen in the urine is no guide to the severity of the case, for eclamptic convulsions may occur without any albumen appearing in the urine, or even without any alteration in the amount of urine excreted. The author then considers that a toxin is elaborated in the placenta in cases of eclampsia, and that this toxin passes into the system and then affects principally three organs—viz., the brain, liver, and kidneys. The liver and kidneys are two great eliminating organs respectively of the portal and systemic systems, and are thus readily damaged by any poisons, whether chemical or bacterial in origin, as is indeed seen in a number of infections. Further, the author suggests that the liver attempts to store and to render innocuous this toxin, and thus explains those cases of eclampsia which occur after parturition; they are due to a re-infection from the liver.

The liver powdered up in the same way as the placenta was proved to be toxic to animals, and produced death in nearly all cases.

The brain of eclamptic patients was taken from the post-mortem room and treated in the same way, and also injected into rabbits, but was found to be non-toxic; it therefore suggested itself to the author that the brain-substance might be able to fix the toxin, and so render it harmless. With a view to ascertaining whether this was so, some eclamptic placenta and normal brain were crushed up together, dried and powdered, and injected into rabbits, with the result that the eclamptic placenta was now found to be non-toxic to the animals. These experiments are still being more fully investigated. In a similar way the dead fetus was crushed up and powdered, and proved to be non-toxic to animals, thus discrediting the fetal origin of eclampsia.

Five years ago Professor Bumm in Berlin prophesied that if the uterus were at once emptied as soon as the patient had a fit, the then existing mortality of 30 per cent. might be reduced to 5 per cent.

The author therefore gives figures to show that in Berlin and Halle, where during the last five years immediate induction of labor has been performed in all cases of eclampsia, the

mortality has been reduced to 2.8 per cent., and if the last seventy-nine cases treated in Berlin alone are taken into account, it has further been reduced to 1.8 per cent., thus exceeding the great reduction prophesied by Bumm. It is therefore urged that the only treatment of eclampsia is to induce labor as soon as possible, and at whatever cost must the uterus be emptied and the placenta got away.

Saccular Dilatation of Saphena and Hernia.—Picquet and Clacys (Bull. et Mém., de la Soc. Anat. de Paris) report an instance where a large dilatation of the internal saphena vein within one and one-half inches of its junction with femoral vein was diagnosed at a hospital as a femoral hernia. A truss was prescribed, which caused so much pain and interfered so completely with the patient's work that she had to discontinue it. She consulted Guinard for pains in the lower extremities and varicose veins. At that time she was thirty-one years of age. Over six years previously, in the course of a twin pregnancy, very large varices developed in each leg and disappeared after labor, whilst within two years a swelling developed in the left groin after heavy work. After the error in diagnosis and treatment above noted, the varicose veins began to dilate again, and the patient suffered from frequent desire to make water. Guinard defined a tumor of the size of a small hen's egg in the middle of Scarpa's triangle on the left side. It could be reduced, and there was no gurgling during the reduction, but directly pressure was relaxed the swelling reappeared. There was distinct thrill; impulse on coughing, and almost complete disappearance of the tumor when the patient lay down were also noted. The circulatory and respiratory centers showed no sign of disease, nor was there hernia of the bladder. Guinard operated; the swelling was a sacciform dilatation of the inner aspect of the internal saphena vein. When empty it was of the size of a walnut, the aperture of communication with the channel of its vein was wide, and its walls were healthy and uniform in thickness with the walls of the vein itself. Picquet and Clacys observe that Sir W. Bennett has shown that lateral dilatations of veins are of congenital origin, whilst fusiform dilatations are simply varices, both as to cause and pathology.

Malignant Degeneration of Fibroids.—Winter (Monats. f. Geburts. und Gynäk.), in discussing all forms of degeneration of fibroids, dwells at length on malignant changes. Beginning with carcinoma he insists that there is a direct relation between cancer and uterine myoma. Cancer of the cervix is found in 2 per cent. of all cases of uterine fibroid disease, whilst cancer of the body of the uterus occurs in no less than 1.2 per cent. In the uterus free from fibroids cancer of the cervix is fifteen times more common than cancer of the body.

Winter maintains that the complication is too rare to influence the question of operative or expectant treatment, and does not even insist that in hysterectomy the cervix should always be removed. In seventeen cases of cancer of the stump it is only certain that in seven the cervix was free from cancer when the uterus was amputated. Diagnosis is difficult. The free escape of a sero-sanious discharge, sharp pains referred to the tumor, and hemorrhages at or after the menopause are highly suspicious. Sarcoma represents a change in the myoma itself. In 753 cases of uterine fibroid disease this change was noted in 5 per cent.; it occurred more than twice as frequently in submucous as in interstitial fibroids, and twice as often in the latter as compared with subserous fibroids. Diagnosis of sarcomatous degeneration of uterine fibroids is very difficult. In the case of interstitial myoma the complication alternately involves irregular hemorrhages, very severe local pain, and emaciation and debility; ascites and peritoneal inflammation appear later, and often it is not till the development of metastases that malignancy becomes evident. Change in consistence of the fibroid is in itself no indication of malignancy.

Arterio-venous Aneurism of the Subclavian.—Pluyette and Bruneau (*Rev. de Chir.*) describe a case of arterio-venous aneurism of the third portion of the subclavian on the right side, caused by a revolver bullet, and give results of a study of nineteen recorded cases of this affection. The aneurism followed in nine cases a punctured or incised wound, in eight cases gunshot wounds, in two cases a simple fracture of the clavicle. It occurs with equal frequency on the right and left sides of neck, and in a large number of cases involves the artery in the posterior triangle. It is indicated by a thrill or vibratory murmur over the seat of the injury. Pulsatile tumors are usually smaller in these than in other regions affected by similar aneurisms. Associated with the thrill is a bellows sound, increased during cardiac systole; both diminish in intensity as the aneurism becomes more limited. Although noted in less than half the cases, venous dilatation, not only of the upper extremity, but also in the neck and on front of the thorax, is a constant sign. On the affected side the radial pulse is usually small and feeble, and in some few instances was found quite suppressed; oftentimes the two radial pulses are not synchronous. In this disease nervous disturbances, impairment, and in some cases total loss of both motility and sensibility in the upper limb, play an important part in the clinical history. As a rule, such disturbances are due to compression or laceration of branches of the plexus more than to complete section of the plexus. Both authors oppose operative treatment, as except in cases of serious hemorrhage or tendency to rupture of the sac,

such treatment would be very difficult, owing to the deep situation of the swelling by the displacement of the artery and vein, and the subsequent weakening of the upper limb if during the operation it is found necessary to remove part of the clavicle. Danger may chiefly be set up by excessive hemorrhage and air entering a large vein. That a radical cure by operation practiced as a choice of method ought on account of danger to be rejected is a prudent and logical conclusion, supported by statistics. In twelve cases treated without operation only one was fatal. In seven cases treated by operation the mortality was 8.3 per cent.; of four patients who survived, two suffered from impotence of the upper limb, and two were lost sight of after convalescence.

Spinal Anesthesia.—Lazarus (*Zeitsch. f. phys. u. diätet. Therapie*) puts forward a plea for the wider use of spinal anesthesia in surgery. He contends that the unfavorable results which have been obtained by some of those who have used this method are due to either the use of an unsuitable anesthetic or to faulty technique. Cocaine is not a good drug to use, on account of the dangerous symptoms which may accompany the production of anesthesia. A number of similar alkaloids have been investigated, and the author recommends stovain, a product synthesized by Fourneau at the suggestion of Emil Fischer. Its chemical constitution is near to that of cocaine and eucaine, but it is only a half to a third as poisonous as cocaine, and can therefore be safely used in larger doses. Glass capsules are used, containing 0.04 gram of stovain, 0.0001 adrenalin, 0.00004 boric acid, 0.0011 sodium chloride; 0.04 to 0.06 gram stovain are given in one dose. The technique of the injection is as follows: The patient lies on the affected side, as the anesthesia is deeper on the side which is most dependent at the time of injection. In some cases the patient is in the sitting position. The usual precautions having been taken to prevent infection, a hollow needle 6 to 8 cm. long attached to an exploring syringe is plunged in immediately below the spine of the second or third lumbar vertebra, directly in the middle line. The needle should contain a fine trocar, which prevents it from becoming blocked. On removal of the trocar, if the point of the needle is at the right depth from the surface, about 5 to 7 cm., a little cerebro-spinal fluid will escape, and should be allowed to do so to the extent of 1 or 2 c. cm. The injection of the lukewarm fluid above mentioned should then be made quite slowly. Rapid injection may lead to the fluid reaching the upper part of the spinal cord, and causing vomiting and collapse. After removal of the needle the patient is laid upon the back, with only a small cushion beneath the head. In three to ten minutes a sensation of weight, warmth,

and deadness develops in the legs, and the sensation of pain is found to be lessened, and soon disappears. The sense of touch, and of heat, cold, and vibration is usually dulled, but pain may be lost while these sensations or some of them remain. The reflexes are usually lost in five to ten minutes after the infusion. An example is given of a case in which an immovable knee-joint from gonorrheal arthritis was forcibly bent under spinal anesthesia, mobility ultimately resulting from the treatment.

Hemorrhage due to the Low Situation of the Placenta.—

Rudaux (La Clinique) points out that the occurrence of hemorrhage during pregnancy or at the time of delivery is often explained by finding that the placental site is situated in the lower segment of the uterus. The condition is not necessarily placenta previa; the placenta may be attached to any part of the wall of the lower third of the uterus. Losses of blood from the uterus are characterized by being either copious, continuous, or recurring. When due to the placental situation they occur during pregnancy, or else tend to complicate delivery and the post-partum period. In discussing a case of ante-partum hemorrhage, he says that it is only possible to form a correct estimate of the amount of the loss by personal observation, which should include a careful examination of the general condition and pulse of the patient.

The patient being placed in bed with the head low, a douche of very hot water should be administered; several pints may be passed in until the returning fluid is no longer blood-stained. The patient must continue in bed for some time after complete cessation of the bleeding. Should the desired result not be obtained, or should the general condition be serious when the case is first seen, it is necessary (with due antiseptic precautions) to rupture the membranes. In multiparæ this interference is not difficult, as the cervix is usually patulous, and it is not usual to find the placenta lying before the cervical orifice. Antiseptic, but not poisonous, injections should be administered every four hours, and a pad kept over the vulva. It is unwise to leave the patient until one hour at least has elapsed since the cessation of all hemorrhage. It is prudent to leave ready a supply of gauze and cotton wool, with the necessary antiseptics and some saline solution, and to instruct the nurse to prepare a good supply of boiling water, and send for assistance should the bleeding recur. In the case of a patient who has frequent or continuous slight losses rest in bed is required, and if possible a hot douche should be given night and morning. If the pulse-rate does not rise above 100 it is better to let the pregnancy continue, an increase in the pulse-rate accompanied by signs of anemia and syncopal attacks is an indication for rupturing the membranes with a view to bringing on

labor. Subcutaneous saline injections are required, and four-hourly antiseptic douches with a protective pad over the vulva are advisable.

If the hemorrhage continues, or if the fetus is dead, labor is more speedily brought on by introducing a Champetier de Ribes bag. When bleeding occurs during labor it may be checked by a very hot douche or by rupturing the membranes. Before doing this, it is necessary to make certain that the position is not transverse, or to correct it if needful. Continued hemorrhage with a rapidly rising pulse-rate indicates the necessity to terminate the pregnancy without delay. This is best accomplished by dilating the os with Champetier de Ribes's bag or with tampons of gauze, or in urgent cases by manipulation, version is then performed and the fetus delivered rapidly. Injections of saline solution are given to combat the syncope.

Delivery may be accomplished more rapidly if dilatation is complete by putting on forceps, or, in the case of a dead fetus, by using the cephalotribe. Extraction of the fetus is often followed by serious hemorrhage, which will speedily cause collapse. In such cases, if hot douching does not check it, the hand must be introduced and the placenta delivered; this is then followed by an intrauterine injection. The patient requires to be watched for several hours; if the uterus relaxes abdominal massage must be employed and hot vaginal or intra-cervical douches given. The lower segment of the uterus does not contract well, and it may be necessary to plug the cervix with gauze tampons in order to arrest the hemorrhage. In all cases of hemorrhage the general condition requires that the patient shall maintain the recumbent position, with the head low. She should be given hot-water bottles, injections of ether and caffeine, subcutaneous injections of salt solution, and spoonfuls of hot water with alcohol in it; inhalations of oxygen are useful when there is a tendency to syncope.

Pulmonary Complications after Abdominal Operations.—Bibergeil (*Archiv. f. klin. Chir.*) publishes the results of an analysis of 3909 abdominal operations, including those for strangulated and reducible herniæ, practiced in Korte's clinic, and points out what he concludes to be the most likely causes of post-operative pneumonia in this class of cases. Notwithstanding the protection afforded by modern aseptic methods against peritoneal infection, this pulmonary complication occurs, it is stated, more frequently after laparotomy than after any other major operation. Pneumonia followed 135 of the collected cases, and presented in 10 instances the croupous or lobar, in 98 the lobular, and in the remaining 27 the hypostatic, form. Other complications, such as pulmonary embolism and abscess, bronchitis, pleurisy, and empyema, occurred in 147

other cases. In his study of the causes of pneumonia in abdominal surgery, the author finds that the occurrence of this complication is not influenced in any way by the condition of the wound. Of 10 cases of the croupous and distinctly septic form of pneumonia, 8, with regard to the seat of operation, were aseptic, and 2 only were septic. Careful study of the collected cases of post-operative pneumonia has led to rejection of the views that this complication may be due to infection by way of the lymphatics, and to such causes as exposure to cold of the surface of the body or of the peritoneal cavity, to abdominal irrigation, and to direct action of a general anesthetic. The lobular form, or broncho-pneumonia, which is most frequently met with after laparotomy, is regarded as being usually the result of autoinfection due to aspiration, whilst the patient is under the full influence of an anesthetic, of secretions from the mouth and pharynx. It is pointed out that the interference with free breathing and expectoration resulting from pain at the seat of operation and impeded movements of the incised abdominal wall, must favor very much the development of lung disease after laparotomy, whilst the resistance to the inflammatory attack is in many cases much impaired in consequence of the enfeebled condition of the patient. In concluding, the author recommends as suitable prophylactic measures, thorough cleansing of the mouth and throat and irrigation of the stomach before the operation; a cautious administration of the anesthetic, the patient's face being turned to one side to permit a free external flow of oral secretion; prevention of chilling of the surface of the abdomen during and after the operation; the application of thick and warm compresses to the wound, and avoidance of tight bandaging; frequent change of the patient's position in bed during the after-treatment; and as speedy a release from the recumbent posture as the state of the wound will allow.

Malignant Tumor of Suprarenal Capsule in an Infant.—Lapointe and Lecene (*Bull. et Mém. de la Soc. Anat. de Paris*) describe the histology of a tumor removed by the former, which was certainly malignant and seemed mixed, carcinomatous and sarcomatous elements being detected in different parts of sections made from the growth. The patient was a girl nineteen months old, she had an abdominal tumor which was diagnosed as an embryonic adeno-sarcoma of the kidney, a frequent error, as renal tumors of that type are not rare in childhood. The operation was difficult from the beginning and was really incomplete. The tumor was reached through an anterior abdominal incision; it adhered to the left crus of the diaphragm and the abdominal aorta was wounded and required ligature. The child survived the operation for two hours. The tumor

was of the size of two fists, multilobular, and for the most part firm in consistence. It extended into the left loin, pushing the left kidney outwards; during the operation it was not until the tumor had been freely enucleated that the kidney was discovered quite separate from the new growth. Then it began to be suspected that the suprarenal body was the seat of disease. At the necropsy this suspicion was verified, as the left suprarenal body was missing, its fellow and the two kidneys being normal. A part of the growth was found unremoved; it ran into a mass of infected pre-vertebral glands which extended upwards into the posterior mediastinum and adhered to the great vessels, especially to the wounded aorta.

Physiological Glycosuria of Pregnancy.—Rudaux (La Clinique) distinguishes between glycosuria and pregnancy. It is normal for sugar to exist in the urine of parturient women, of nursing women, and of a certain number of pregnant women. During pregnancy the hepatic gland secretes an abnormal amount of glucose, partly as the result of the hyperactivity of all its functions, which involves also the glycogenic function, and partly to supply the mammary gland with the materials which it requires for the exercise of its function. A systematic examination of urine during pregnancy shows that after the sixth month it is not uncommon to detect as much as 3 or 4 grams of glucose in the urine, and that as term approaches this glycosuria tends more and more to become lactosuria. The mammary gland is preparing for the active exercise of its function after parturition. If the liver only secretes a small quantity of glucose, it will be entirely transformed into lactose by the mammary gland, and as it is not yet utilized it will be reabsorbed by the blood and excreted in the urine. If an excess of glycogen is secreted, only part of it will be converted into lactose; the remainder will be eliminated in the urine at the same time as the lactose, and both glycosuria and lactosuria will be present. When there is hyperactivity of the glycogenetic function, the urine may contain as much as 20 grams of glucose without being accompanied by any of the other characteristic symptoms of diabetes.

The proof that this glycosuria is physiological and not pathological lies in the facts that the pregnancy is normal, and that it disappears a few days after parturition, when the function of the mammary gland is established. The glycosuria of pregnancy is more common among multiparæ, especially among those who have already nursed their offspring, and indicates that the mother will be able to nourish the child well. It is questionable whether women who have suffered during pregnancy from a severe or prolonged toxemia of hepatic origin will be able to supply a milk containing sufficient lactose, for

an inefficient liver must react equally upon the glycogenetic and the antitoxic functions.

Post-partum Gangrene of Lower Limb.—Schuhl (Prov. Méd.) reports a case which occurred in hospital. The woman suffered from eclampsia, but was safely delivered and beginning to recover when she developed a painful gangrene which involved the whole of the left leg and foot, and which proved fatal. In this case the gangrene was due to obliteration of the femoral artery. Puerperal gangrene is due either to arterial or to venous obliteration, or to a combination of these. Endarteritis is more common than phlebitis, and a bacteriological examination of the clot generally shows the presence of an organism—either staphylococcus, or streptococcus, or, as in the case reported, the *bacillus coli*. Post-partum gangrene does sometimes occur without any previous elevation of temperature; in the above case the temperature did not exceed 37.5° or 37.6° C. Obstetrical trauma, artificial delivery, hemorrhage, albuminuria, and eclampsia may all be considered as causes of infection which have an etiological importance. Some hours before death this case developed intestinal hemorrhage with abdominal pain and vomiting; these symptoms were in all probability due to a hemorrhagic infarct of the intestine the result of puerperal infection. The pathology of this condition is similar to that of puerperal gangrene in a limb; the autopsy reveals a clot in an intestinal artery. The prognosis is serious, and chances of successful surgical interference depend upon the position of the clot. The rate of mortality among these cases is very high.

Sarcoma of Female Urethra.—Kamann (Monats. f. Geb. u. Gyn.) describes an instructive case of a tumor which presented at the urethral meatus. The patient was fifty-five, and had been subject for a year to a yellow discharge and for three months to burning pains during micturition. She consulted the doctor for a swelling in the vulva, which she had first noticed four days previously. Kamann detected a dark-red tumor of the size of a small walnut, with its surface ulcerated; it completely covered the meatus and part of the vaginal outlet, and was connected with the mucous membrane of the urethra by a distinct pedicle, so that it simulated a uterine polypus with its pedicle constricted by the meatus, simulating an os externum. Clumsy attempts were made afterwards by an inexperienced operator to remove the tumor; ultimately it was extirpated by aid of the thermo-cautery. One year later the patient was free from any sign of recurrence. The tumor was found to be a small-celled sarcoma, partly angiomatous; it arose from the submucous connective tissue of the urethra.

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THE PROPER MANAGEMENT OF ABORTION.

BY CHARLES HOYT, M. D.

Abortion is to be defined as a premature casting off of the product of conception before the end of the fourth month. After this period up to the sixth month, we would use the term miscarriage, and from the sixth month on, premature labor. I have chosen the subject of abortion for my paper because of the fact that the proper and correct method of dealing with these cases seems to be not well understood by very many practitioners of medicine. I shall not attempt, and do not desire, to give a scientific treatise on abortion, for the guidance of specialists in gynecology and diseases of women, but something that will prove helpful, and somewhat of a guide to the every-day general practitioner, given from my own experience in dealing with this all too common trouble. If improperly managed I do not know of anything that can cause more anxiety, worry, and loss of time than these troublesome cases of abortion.

Now, I shall not attempt to settle the question regarding when it may be deemed right and proper for the physician, after due study and careful deliberation to perform an abortion in any given case, on account of some physical condition on the part of the prospective mother such as a serious heart

lesion, albuminuria, persistent vomiting, epilepsy, serious disturbances of the nervous system, and cases of markedly contracted pelvis. The above enumerated conditions, as well as some others not mentioned, furnish possible reasons for inducing an abortion, in order to save the life of the mother, but such questions can only be settled rightfully in one way, and that is by the consultation of capable medical men who are able to size up the situation and judge correctly regarding the gravity in each individual case, and the necessity for terminating the pregnancy. I desire particularly to refer to accidental, and I might add criminal cases of abortion where the patient has visited some unscrupulous physician or abortionist, and after getting the trouble started, returns to her family physician whom she expects and believes will bring her safely through her trouble.

Regarding the technique to be followed in producing an abortion where upon due consultation and deliberation it is found necessary to take such a step, the bougie introduced into the uterine cavity in a careful manner has usually proved the most satisfactory, this to be followed a little later by packing the os with nosophen, iodoform, or sterile gauze to control the hemorrhage and bring about dilatation and expulsion of the ovum. The introduction of the glass plugs in graded sizes and the vagina packed with sterile gauze of some kind to retain the plug *in situ*, as recommended by Thomas, is also an exceedingly safe and satisfactory expedient. However, before doing anything, it is important to properly sterilize the vagina and external genitals as well as the hands and all instruments used about the case. It is surgical, and surgical asepsis should at all times be scrupulously observed.

We now come to consider the natural history and course of abortion as observed in every-day practice. We meet with cases of threatened abortion that can be prevented and the case carried along to full term by putting the patient to bed and keeping her recumbent and as quiet as possible and administering the proper internal remedies. This condition is, I am sure, fully understood and appreciated by all physicians and this part of our subject will be dismissed with this statement of facts.

We come now to consider cases of abortion where the fetus and membranes are expelled entire or where the fetus is

expelled and the membranes or placenta or both are retained in part or entire. Also cases of threatened abortion where no part of the contents of the uterus has been expelled, but the pain and hemorrhage indicate that the uterus cannot be prevented from sooner or later expelling its contents.

Now some authorities advise active intervention in all cases of abortion by putting the patient upon an improvised operating table, such as can be made to answer the purpose in every household, giving an anesthetic, either chloroform or ether, dilating the os forcibly and thoroughly enough to admit the finger and such instruments as it may be necessary to use, and proceed to at once thoroughly and completely empty the uterus and curette and douche it out and then put the patient to bed. They claim for this method that it is thoroughly up-to-date and surgical, and aseptic, saving time for the doctor and affording greater safety and protection for the patient. I do not agree with this proposition (only possibly in the saving of time) in the hands of the average practitioner. The above procedure might be all very well and quite the thing to do were the case in the hands of a thoroughly trained gynecologist, thoroughly familiar with the best antiseptic methods, and with the delicately educated touch that would enable him to use the curette and dilator in an entirely safe and proper manner. But for the general practitioner to adopt this method, except in cases that plainly demand this sort of intervention, I desire to file my protest, as it is both dangerous and unnecessary.

I am persuaded, after many years' experience and seeing numerous accidents and infractions on account of physicians attempting to do this sort of work, for which they neither possess the necessary skill and training or the delicate sense of touch demanded in these cases, that in the great majority of cases of abortion this sort of interference by the attending physician is not only unnecessary, but positively harmful and dangerous. Nature is very kind and helpful in the great majority of cases and she renders active intervention on the part of the physician with dilator, curette, and douche, quite unnecessary and uncalled for. The same rule applies in cases of abortion as in cases of obstetrics that there should be no active intervention only in cases clearly calling for it.

Fingers and instruments only in and on the hands of those thoroughly skilled and trained to use them carefully and

aseptically are to be trusted, as they are liable to carry with them grave danger. From my own observation, cases of abortion treated surgically, that is by means of the curette and douche and the forcible and immediate removal of the product of conception and the membranes, do not get along any better or enjoy better after-health than those treated less radically and where the case is largely left to Nature's methods, excepting to control hemorrhage by tamponing the vagina, which at the same time assists in expelling the uterine contents. This only refers to normal average cases of abortion as seen in everyday practice and is in no wise intended for a guide in treating cases where prompt and surgical interference is manifestly indicated by rise of temperature or signs of decomposition or sepsis. In such cases the uterus should be promptly emptied of its contents by the aid of the finger, placental forceps, and the curette, and the interior of the uterine cavity very carefully cleansed with some antiseptic solution, and the patient put to bed, there to remain quietly for several days until all danger is passed.

Now what is to be done when called to the ordinary case of abortion where you find the patient suffering more or less pain and the hemorrhage sufficiently profuse to demand that something be done in order to conserve the patient's strength and possibly save her life? Upon making a vaginal examination, you find the os more or less tightly closed. The first thing to do is to place the patient in a position where you can carefully wash and cleanse the external genitals and have a thorough hot vaginal douche, and then pack the vagina tightly and carefully with nosophen, iodoform, or some other sterile gauze, and if the os is open enough to permit of doing so, the gauze should first be carried up into it as much as possible and then the vagina carefully packed by first packing the gauze into the posterior *cul-de-sac* and then the anterior *cul-de-sac* and then filling the remainder of the vagina tightly with the gauze or cotton made in the form of a kite-tail and soaked in a five per cent. solution of carbolic acid and then wrung out dry in the folds of a sterile towel. This tampon is the sovereign and specific remedy in abortion, and when properly applied you can leave your patient and go about your business with a clear conscience and a perfect sense of security so far as the safety of your patient is concerned. With the assurance that when you return in from six to twenty-four hours you will find your patient in as good or better condition than when you left her. Upon removing the tampon you will very likely find that the entire uterine contents have been expelled into the upper

part of the vagina and that your troubles are at an end. If not you should again carefully cleanse the vulva and vagina and reapply the tampon as before, and you will be certain to bring about dilatation of the os and expulsion of the uterine contents in one or more applications of the tampon, carefully applied as I have directed. After dilatation and expulsion of the fetus, should any membranes or placental mass remain within the uterine cavity it should be promptly removed by the aid of the finger, placental forceps, or curette, one or all, as may be necessary, and the cavity douched with bichloride solution or some other antiseptic of recognized value. Sometimes when the uterus is only partially emptied of its contents and the os is dilated, by packing the uterine cavity with nosophen gauze it will excite uterine contractions and expel the gauze packing and the remaining membranes, making interference with curette unnecessary. After applying a vaginal tampon, as has been indicated, it is almost certain to bring on pain and excite contraction of the uterus, which causes dilatation of the os and expulsion of the uterine contents. A sudden cessation of these expulsive pains is almost positive evidence that the contents of the uterus have been forced out of the uterine cavity into the vagina.

I desire to emphasize the fact that the tampon is the sovereign and specific remedy in all cases of abortion, excepting in such cases as I have already mentioned, where active intervention is called for on account of the condition of the patient. Then it becomes necessary to treat the case in a strictly surgical manner by carefully cleansing the vagina and external genitals with soap and water and antiseptics, as well as the hands and all instruments employed, and then forcibly dilating the os uteri and with the aid of the finger, placental forceps, and curette, remove the entire uterine contents. This to be followed by a careful douching of the uterine cavity with some antiseptic solution.

However, you will readily understand from what I have already said that I prefer and advise giving what might be termed the expectant plan of treatment aided by the tampon the *specific* remedy in cases of abortion the widest reasonable limit, believing as I do that such a course is the proper one to follow for the safety and good and future health of the patient and best conserve the reputation and honor of the average general practitioner.

Case of abortion, like every other problem that confronts the conscientious physician, must be carefully individualized, and while I have not taken up all the minute details that one may meet with in the handling of a variety of these cases, I think the deduction and generalizations given will furnish a safe and satisfactory guide for the treatment of cases of abortion as seen by the average general practitioner.

NURTURE OF THE MAMMARY GLAND.

BY SARAH M. HOBSON, M. D.,

Adjunct Professor of Pediatrics, Chicago Hahnemann Medical College.

The lament that the mammary gland is in danger of becoming atrophied through disuse has gone up even from our Institute members. If the family physician were as alert to his opportunity as the salesman of modified milk products, there might be in a single generation some advance in the increased functional activity of this maternal gland. The veriest neophyte in gardening knows that, if he is to modify the functional activity of his vegetables, he must begin with the young plant or with the seed. But most of our instruction in mammary development begins with the mother in her first pregnancy or after delivery; when, instead, it should concern chiefly the mother in embryo, the girl from conception to puberty.

The organ is a highly modified gland of the skin, analogous to the sebaceous glands. In a stroma of fibrous and elastic tissue and fat, which tissues determine chiefly the size and shape, the milk ducts and the acini are surrounded by a network of blood vessels, lymphatics, and nerves; upon this latter tissue group depends the value of the gland as a source of food to the infant. The gland is a true secreting organ, that is, its product is not found in the blood; the work is done in the ultimate follicles, where occurs the osmosis of salts and fats, the change through epithelial activity of serum-albumin to the milk proteids, the production of other fats and milk sugar. The extent and activity of this epithelial surface and the development of the milk ducts measure the efficiency of the gland; the test of this efficiency is the rapid decrease in size when the milk is withdrawn. In spite of reputed diminution of function, the blood supply remains fairly constant; being furnished from branches of the internal mammary and axillary; the nerve supply is abundant, coming from the cervical plexus, the brachial plexus and the first six intercostal nerves; the lymphatics, likewise, are widespread, leading to the axillary and mediastinal glands, to the lymphatics of the liver, the supra-clavicular and the intercostal glands.

* Read before the Obstetrical Society of the A. I. H., at Atlantic City, September 11, 1906.

The differentiation of the mammary gland begins in the fourth month of fetal life, when the columnar cells of the malpighial layer proliferate rapidly, producing buds as secondary epithelial processes. At birth, there exist only the main milk ducts and a few club-shaped buds. But in the first fortnight development goes on rapidly with the appearance of glandular tissue and true secreting membrane, as is sometimes evidenced by the secretion of a few drops of fluid. The second important period of growth is the two or three years preceding puberty. This period is most important, for there is abundant growth of new tissue; the supporting stroma is usually firm, and the progressive budding and differentiation of cells go on rapidly, receiving an added impetus at puberty and at each recurrence of menstruation up to full maturity. The essentials of a normal development of the mammary gland are those conditions imperative to the normal growth of any other organ, abundant food, oxygen, adequate exercise and sleep. This means that the girl, particularly from eight to fifteen, shall not be confined indoors, shall not be under harassing mental discipline, shall not be under-fed, under-slept, or overworked. From this time until maturity, the breasts should be watched as an indication of the ovarian development. School, music, parties are never to be rated of more importance than the purely physical development of the body. This mode of life does not forbid hard courses of study, or college or equivalent education. True, the child subject to serious functional or organic disease may be limited to a minimum of mental application; but the normal, healthy girl can maintain her vitality and be ready for college in her later teens. As a fact within observation, the college-bred woman is eager to nurse her child. There is incidentally opportunity for the family physician, either directly or through the mother, to instruct the girl in the care of the breast. The esthetic, as well as the functional value of the gland, should be recognized and acted upon without prudery or vulgarity.

The third important period in the cultivation of the mammary gland is during the first pregnancy and the six months immediately following. Early in pregnancy, the gland exhibits the highest degree of activity in the rapid increase of secreting. In absence of this normal development, gentle stroking from the periphery to the nipple, pulling up of the nipple and careful

application of electricity will further development in some degree; also full nutritious feeding which must be accompanied by an active outdoor life to properly assimilate the products of digestion. After delivery, when the current of extra nutrition is turned from the placenta to the breast, the importance of regularity of nursing is undeniable. Intervals of four to six hours during the first two days suffice to remove the colostrum, draw out the nipple and promote uterine contraction. Then the interval should be two to three hours by day and four to six at night until the end of the third month, when the day interval should be three hours and the night nursing abandoned as soon as a drink of warm water will serve as a substitute. Up to this time the mother is disturbed more or less in her night's rest, and this should be compensated by sleep during the day, and absolute freedom from responsibility for the child for a definite period in order to secure sufficient relaxation and rest. In many instances, a capable nurse who takes entire care of the child at night away from the mother, interrupting the mother's sleep only for imperative nursing, is the most effective measure to promote adequate milk supply. Full feeding of an agreeable, nutritious diet is preferable to a crowded liquid diet. The solids of milk are little modified by diet, but digestible fats increase the secretion. Violent emotions, physical or mental weariness have always been counted baneful to good nursing. Occasional substitute feeding, in order to give the mother time for vigorous outdoor exercise, has not been so generally recognized as an important factor in infant feeding. Under ordinary circumstances, human milk decreases somewhat in proteids with the advance of lactation, while the best results in artificial feeding have followed by reversing the rule; this makes rational supplementing maternal milk with modified milk before weaning.

Biologically, then, the glandular structure is present; the fault lies in the proper appreciation of the function. The remedy lies in the adequate instruction of womankind in the importance of maternal feeding. In the extraordinary strife for social position in the last century, the gorgeous display of wealth and its inevitable shadow of abject poverty, the tempting possibilities through intellectual achievement, women have lost sight of some of the true values of life. Original work is always engrossing. The parent's work in transforming the crude, raw material of the young human animal into the finished product of maturity is as truly creative work as the artist's evolvment of a masterpiece from raw colors. The first necessity is to give the girl a normal environment, second, to convince the young woman that the physical well-being of her child is of primary importance, and that a good quality of maternal milk is a prime requisite of the first year of life.

A CASE OF SIMULTANEOUS ECTOPIC GESTATION
IN BOTH FALLOPIAN TUBES.*

BY GEORGE BURFORD, M. D.

The especial interest of this case lies in its exceeding rarity. Professor Schauta, the renowned gynecologist in Vienna, mentioned in a paper last year that only four of these cases have been reported in medical literature. A fifth was brought to light at the time of this discussion. Our ensuing case thus constitutes the sixth.

The patient was a married woman, aged thirty-three, and came to us on November 28, 1904. The clinical history showed that she had a normal parturition twelve years ago; two years later a premature labor occurred, with adherent placenta. Several miscarriages took place in the ensuing years, and the last about three years prior to the present date. Since this last miscarriage she had been perfectly regular, the last normal period commencing on September 7, 1904.

In October the menstrual period was wanting and late in that month and during November, a sanguineous daily discharge, now lighter and now darker in tint, had persisted up to November 28, the date of consultation. During this hemorrhagic term she experienced constant pain, day and night, sometimes with acute exacerbations. There had been no definite crisis or collapse, and the occasional acute seizures of pain were safely tided over. No shreds or membranous patches had been seen in the vaginal flux. Examination showed diffused abdominal tenderness below the umbilical zone. The percussion reaction was ill defined, and no definite area of dullness was demonstrable. Per vaginam the uterus was drawn to the right side, not freely movable, enlarged, as in chronic subinvolution, and flanked by a diffuse inelastic deposit, mainly on the left side, distributing itself in less degree behind and to the right.

The diagnosis seemed to leave little to seek, and she was at once sent to the hospital. The following day while in bed, symptoms of internal hemorrhage suddenly occurred, and the condition being critical the abdomen was opened without un-

* Read before the Obstetrical Society of the American Institute of Homeopathy at Atlantic City, N. J., September 10 to 15, 1906.

necessary delay. A small quantity only of recent clot presented itself, while the pelvis was roofed over by dense omental and intestinal adhesions.

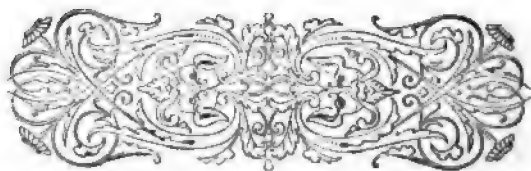
Breaking through these, some handfuls of clot and a good deal of fluid blood were removed, and an intimately adherent mass about the size of an orange enucleated with difficulty. This was the left gestation sac, and perpending from it was a fetus still alive. Further search revealed a tubal swelling of less dimensions of firmer consistence on the right side, which on removal proved to be another gestation sac with another fetus plainly visible.

The most recent hemorrhage had been from the left side. Transfusion to the extent of two and one-half pints was carried during the operation. The patient made an unbroken recovery.

An elaborate pathological examination was made of the parts removed. The following is a summary:

"From the measurements of the fetus of the two sides, 38 and 41 mm. respectively, it would seem that they must be of approximately the same period of growth, and if not actually conceived at the same time have been nearly so. The ages of the fetus correspond approximately to eight weeks.

"The smaller fetus is very macerated, and so may be regarded as having been at one time more nearly the same size as the larger one, which is quite well preserved.



VENTRO-SUSPENSION AND VENTRO-FIXATION.*

BY NATHANIEL W. EMERSON, M. D.

On many previous occasions I have taken advantage of opportunity to emphasize the difference which should ever be carried in mind between the meanings of the terms ventro-suspension and ventro-fixation. They are in no wise synonymous, the indications for each are as definite and individual as well could be, and while it is true that the technique of the operations themselves vary very little in detail, the variance which does exist gives marked differences in the results obtained. Ventro-suspension, as here used, means literally suspension of the uterus to the abdominal wall in a position of mobility approximating the normal relations of the uterus. Its sole object is to support the uterus in a comfortable position in such a way that the circulation of the organ may go on normally, the nerve supply be without interruption or irritation, and so that the uterus may not press upon or be pressed upon by contiguous organs. Furthermore, ventro-suspension is indicated and undertaken most frequently at a time of life when all the functions of the uterine sphere are most active, and it is usually called for because these same functions are disturbed. It is frequently necessary to undertake it for conditions which are so acute that the active life of the patient is greatly interfered with and may become intolerable. Furthermore, and most important, is the fact that it is almost habitually called for during the child-bearing period of a woman's life, and whatever operation is undertaken to accomplish the desired result must constantly bear in mind the fact that pregnancy, if it occurs, must not be interfered with. Possibly this marks one of the most distinguishing features between the results obtained from a ventro-suspension and those obtained from a ventro-fixation; for it must never be overlooked that a ventro-fixation absolutely precludes the safe and successful conduct of pregnancy. A ventro-suspension, therefore, is a suggested remedy for such a widely differing group of conditions, and, if successful, gives such complete relief, that to my mind its suc-

* Read before the N. Y. Hom. Medical Society at its Annual Meeting at Albany, N. Y., February 13, 1906.

cessful accomplishment is one of the most important questions of the day to those interested in the surgical features of such cases.

Ventro-fixation, on the other hand, is applied to very restricted conditions which are almost entirely mechanical, and at a time of life when the uterus is practically functionless, is certainly inert and non-sensitive, and when it gives discomfort only because it is associated with such radical displacement as a complete procidentia. Even here the uterus is not the offender, but only participates in a complex mechanical defect which does not have its origin in the uterus. Hence, a fixation is chiefly indicated for, and almost restricted to, a complete prolapsus of the uterus.

Ventro-suspension is therefore the more commonly indicated operation, and the one for the accomplishment of which almost innumerable devices have been suggested and brought forward. At first it was proposed to overcome backward displacement of the uterus, and was largely confined to attempts to rectify such defects, but, by imperceptible and untraceable variations, its proposed field of usefulness has been very much widened. I am not fully conversant with what others are actually doing at present, but in my own hands I have greatly extended its original intentions, and now make use of it in some form almost as a routine measure in such cases as mutilate the tubes and ovaries, leaving the uterus intact; and I employ it even if no previous displacement has existed. It is thus used as a palliative measure and forestalls the future. Let me cite as an example a case of pus tubes where the pelvis is solid with adhesions and plastic deposit and it is necessary literally to dig out the tubes and ovaries. In a considerable proportion of such cases I like to retain the uterus. After the tubes and ovaries are removed, the uterus left behind under such conditions is more than apt to fall back into the pelvis, which is one mass of denuded tissue. If this is allowed, all the chances are in favor of a uterus becoming adherent in the pelvis and permanently fixed there. I know from an extended experience that such cases do not make rapid and satisfactory recoveries. It is true, the danger element is removed with the pus tubes, but when the uterus is left behind and becomes adherent in a faulty position, the patient becomes an invalid of a different type, lives a most uncomfortable and useless existence, and a

period of time extending over years must elapse before even a comfortable recovery is reached. The mutilated broad ligaments are inadequate to support such a uterus, and it has become with me almost a routine measure to provide an artificial support of the uterus in a position which leaves it free.

The cases of uncomplicated backward displacement are among the simplest to manage from the operative standpoint, so far as my experience can determine, and while these are the ones which primarily cause discussions like the present, and, so far as I know, are still the most prolific source of such discussion, a much wider field should be included, as this paper is meant to indicate.

To me adhesions of the uterus, and in fact intra-abdominal adhesions of any kind which cause symptoms, are a positive indication for operation. A displaced uterus which becomes adherent is, I believe, permanently out of position unless the adhesions are forcibly broken up by intra-abdominal measures. I am fully aware that this assertion is rarely made, that it is vigorously combated by those who believe that by manual manipulation and massage, with posture, and possibly various and sundry applications by way of the vagina, such adhesions may be broken up. But I have dealt with too many of them in too great a variety of cases to hesitate for a moment in claiming that it is a physical impossibility to break up such adhesions except by dealing with them directly. The only form of adhesions within the abdominal cavity with which I am familiar which are easily broken up are those which are in process of formation; that is, when an acute inflammatory condition is present. We then find adhesions which are very easily disturbed because they are only in process of organization. Could we manipulate the uterus at such time as it is becoming adherent, we could break up these adhesions, but that is exactly the time when it is impossible to apply any force whatever through external measures. The patient is not only too sensitive to bear manipulation, but such efforts would increase the inflammatory condition already developing. Hence, I look upon adhesions of such a character as to produce symptoms, as a positive indication for operation; and when I listen to assertions supported by elaborate arguments of what can be done by breaking up adhesions through non-operative measures and manipulations, I am sure romance is in the saddle. In any

event, where adhesions exist between the uterus and any adjacent part or organ, and these adhesions are broken up for any cause, whether the uterus was previously displaced or not, I consider such cases very appropriate subjects for ventro-suspension. With a uterus adherent following an operation, the greatest discomfort comes from the binding of the uterus in the faulty position. If it is supported in approximately a normal position, even if adhesions subsequently form, they cause no particularly disagreeable symptoms. What is a ventro-suspension or fixation but an establishing of artificial adhesions? And yet if the uterus is put in an unembarrassed position, the patient is comfortable. Of course it is understood that adhesions are alluded to here only in connection with the uterus, and that there is no intention of discussing them beyond what concerns the subject in hand.

Of the various methods suggested for suspending the uterus, very few have stood the test of experience. Coming at a time when no method had been found acceptable, and because it was an extra-peritoneal operation, Alexander's operation received the widest and most favorable mention, and it, with variations, has probably been practiced more generally than any other single method. The fact that it was comparatively free from danger probably led to a wider acceptance of it than would otherwise have been the case. Its chief defect to my mind is the fact that it depends entirely upon the round ligaments for support. Beyond this it is too indefinite an operation to be acceptable at the present time, and because it does not allow of an inspection of the uterus and adnexa, it should have a very limited use. Personally, I have discarded it entirely. Kellogg's modification of it would seem to be superior to the original operation. Since its introduction many other methods have been brought forward and suggested and it would be impossible for me, as it would be without interest to you, to even mention all of the procedures proposed.

Following the acceptance of Alexander's operation, the next most acceptable proposition was that of attaching the uterus to the abdominal wall direct. No better exposition of the older methods has been given than that of Howard Kelly, the defect of whose operation was, I believe, the effort to put the uterus in a position of anteversion. It also attached the uterus too firmly to the abdominal wall for a suspension; in fact, it prac-

tically anchored it there. In this operation the ill results occurred, I believe, more because of a faulty position of the uterus when so attached, than because of the firmness of the adhesions. With the supporting ligaments attached to the upper portion of the back of the uterus (that is, posterior to the transverse line of the fundus), when pregnancy occurred and the uterus began to enlarge, it necessarily became tilted, and its relation to the normal axes of the pelvis was destroyed. With increasing enlargement, all divergence was aggravated until full term was reached. Hence, it was necessary to modify the operation because of the dangers of pregnancy. A number of suggestions were next made, most of which might be classed as round ligament operations, if I may so use the term; that is, operations depending upon some manipulation of the round ligaments for the support of the uterus, either by shortening them or attaching them to the abdominal wall. All these differed from Alexander's operation in that they were intra-peritoneal. From my observation and in my experience, I doubt whether any operation depending upon the round ligaments alone offers a solution of this problem. I cannot understand how the round ligaments can carry such a burden as is expected of them. This is merely a broad proposition, however, and it is more than possible that the one or two or three operations which will finally be accepted will embrace as some portion of them a use of the round ligaments in obtaining support. Of these later propositions possibly the most discussed method is the so-called Gilliam-Ferguson, which is a true suspension of the uterus. To my mind, theoretically, it is unquestionably the best of the round ligament operations suggested, since it throws upon the round ligament at its strongest part the burden of supporting the uterus. All the others suggested are merely devices for shortening the round ligament, but said shortening takes place at some point distant from the uterus and at the weakest part of the ligament; and still there is the greatest burden upon it at its weakest point. I can find nowhere any definite statement of the remote after-effects of the Gilliam-Ferguson operation. That it will support the uterus, I should have little doubt, and in a movable and comfortable position; but in case of pregnancy it would seem to me as if trouble would follow. The uterus is fixed at either cornu in such a way that the radius of motion is limited by the length of that portion of the round

ligament between the uterus and the abdominal wall, and under no circumstances, if the support of the uterus is adequate, can this radius of motion be very extensive. Hence, in cases of pregnancy I would expect a considerable distortion, especially in the later months. In my opinion, any methods of suspension to be practically acceptable must include as a routine part of its efficiency the safe conduct of pregnancy. Do we eliminate this one factor from the problem, it is so simplified that practically all difficulties are done away with. As successful pregnancy so often relieves a serious displacement, artificial efforts to relieve such displacement must not jeopardize successful pregnancy.

The operation which I have most frequently used (and latterly to the exclusion of all others) is really a modification of Kelly's idea of suspending by a band or bands of adhesions. These adhesions are carefully confined to the anterior wall of the uterus, and instead of one or two bands which act as a sling, a definite attempt is made to create what is to all intents and purposes a third or anterior broad ligament. Two silk-worm-gut sutures are introduced into the uterus anterior to the transverse line of the fundus, and there put in at sufficient depth, and sufficiently far from each other, to obtain a firm grasp upon the uterus. When first employing these sutures, our whole dependence was placed upon them for obtaining adhesions. They were brought out directly through the whole thickness of the abdominal wall, and after the peritoneum was closed and the abdominal sutures were introduced, they were tied snugly, so as to bring the uterus closely against the abdominal wall, and there left for fifteen to seventeen days. A report of a loop of intestine having become incarcerated between the uterus and the abdominal wall, after such a case, first led me to consider the possibility of obliterating this space, and after studying the conditions very carefully during several successive operations, I determined to make an effort to unite the peritoneum over the bladder to the uterus itself. To my surprise no discomfort whatever followed this procedure, and I now know from a very varied class of cases (whose numbers reach into the hundreds) that it is a simple, safe, and efficient procedure. Moreover, as time elapsed and greater experience came to me in the results of such cases, I found that this did more than simply obliterate the space between the suspended uterus and the abdominal wall and bladder. It was of assist-

ance in supporting the uterus in its new position, and I now employ it constantly. After the two suspension sutures are introduced, and before they are passed through the abdominal wall, a small sharply-curved needle with No. 0 catgut picks up the lax peritoneum at the junction of the bladder and the uterus, and from this point is brought in the median line as a continuous suture, uniting the peritoneum over the bladder to the mid-longitudinal line of the anterior wall of the uterus. The peritoneum over the bladder, especially when the latter is empty, is exceedingly lax, and one has no difficulty whatever in picking it up with forceps and including whatever portion seems necessary in the suture. Unless one is careless and introduces the needle into the muscle of the bladder, no symptoms follow this suture. The passage of the needle, together with the stricture of the suture, causes all the irritation that is necessary for adhesions to result; and in the few cases where I have had the opportunity to make a subsequent observation of what has taken place, I found the uterus suspended by what I can only describe as an anterior broad ligament, the description fits so accurately. Since adopting this in a great variety of cases, I feel sure that I have obtained not only greater personal satisfaction with the result, but have also given greater satisfaction to the patient and her physician.

One fact too often overlooked by the operator is the interest of the man who sends him the case. We keep a case three weeks or a month under our care, it having been sent to us by somebody who has many times with great difficulty and much argument paved the way to placing the case in our hands. It is not alone the patient who must be considered under these circumstances. If one does not fulfill to some degree the hopes held out by the family physician, when such patient returns to his care not materially improved, he not only loses his patient but the family. Hence, no small factor in assisting me to arrive at some definite conclusion about the value of the operation here described has been the attitude of the physicians who have sent their cases to me, and to whose care they returned later. I have gone to considerable trouble to obtain their opinion about the results, not of this special device, you understand, but of a successful suspension. Almost invariably they tell me that they are most satisfactory. Many of those who really understand the detail of this operation as-

sure me that no comparatively trivial variation of an operation has given so much relief as has this, which bears out my own estimate of it, so far as I am able to judge it. The immediate results are apparent and are confirmed by time, and (the supreme test in my mind) pregnancy develops undisturbed when the measure is properly carried out. I personally know of two cases where pregnancies have been successfully accomplished with absolutely no untoward symptoms of any kind; and five or six other cases with the same report. This was the verdict of the family physicians who attended them, for in no instance have they subsequently been under my personal attendance. In such cases, nature's method of development in pregnancy is not interfered with. At full term the peritoneum anteriorly between the uterus and the abdominal wall is carried up out of the pelvis, and in this process of development, after suspension, all these suspensory peritoneal bands are carried up in the same way without confining the uterus.

The reasons and indications for a ventro-fixation are entirely different from those applying to a ventro-suspension, and I find it is practically restricted to cases of extreme procidentia. So far as I know, vaginal hysterectomy has been practically abandoned as an operation applicable to these cases. It served a useful purpose, however, since it taught the profession to know that the uterus had very little to do in causing a prolapsus, and was merely a participator in a process which it did not initiate. This probably led to a radical revision of the factors entering into a complete prolapsus, with the result that it was quickly found better to use the uterus as a means of elevating and holding in position all the tissues involved in prolapsus. Its method of accomplishment is similar in many respects to that of a suspension. The fixation sutures are introduced into the uterus with rather a deeper grasp. The first one is put in at practically the same place as if a suspension were to be made; that is, from one-third to one-half inch anterior to the transverse line of the fundus. In a suspension the next suture is placed about half an inch anterior to this; but in a fixation the second suture is placed as far behind the transverse line of the fundus as the first one is anterior to it. By means of these sutures the fundus is drawn well into the wound, and, instead of passing them through the whole thickness of the abdominal wall, they are made to enter upon either side just below the rectus muscle, but anterior to the peritoneum. The peritoneum is stitched to the uterus in a plane which lies below the point of insertion of these sutures into the fundus. Then the recti muscles are stitched directly to the fundus as

it lies in contact with them; after which the operation is completed as usual.

Formerly I urged that an absolute counter-indication for ventral fixation was the possibility of pregnancy, since the uterus fixed as here described could not possibly go on to full term safely for either the mother or child. A more extended experience leads me to modify somewhat such a statement. Cases which are approaching the menopause, or forty years old or more, where a fixation is desirable, should not be excluded from its benefits. Of course if it is done in such a case, the woman must be told all the circumstances of her condition, and if perchance she does become pregnant, the uterus must be freed by a subsequent operation, and the sooner it is done the better. Only one case of pregnancy with ventro-fixation has come under my observation. She was a woman thirty-three years old, on whom a ventro-fixation had been established for reasons which I have never quite understood. The physician who asked me to see the case had previously attempted to curette, and had passed a sound and an uterine curette into the uterus with no apparent effect. When I saw her she was at about the sixth month of pregnancy, and the uterus could be felt, much distorted, lying too far to the left. She was undergoing severe pains at irregular intervals, and it was very evident that pregnancy could not go on unless the uterus were free. I, therefore, opened the abdomen and as gently as possible released the uterus, and as the last band of adhesion gave way, one could see it gravitate to the middle line. The fixation had not been done symmetrically at the original operation, and of course, as the uterus grew larger, the lack of symmetry was emphasized. She made an entirely uneventful and prompt recovery from the operation, and was dismissed from the hospital; but about a month later pains came on again and she miscarried spontaneously. The fetus was dead and macerated, and was at about the sixth month.

Of all the cases of ventro-fixation of which I have had personal knowledge, I am cognizant of only one failure, and here the failure was not due to lack of union of the uterus to the parts to which it was applied, but was due to a rather heavy uterus attached to a remarkably flaccid abdominal wall. In fact, all tissues concerned in the operation were relaxed beyond anything I have ever seen, although the woman was only forty-one years old. Within a year after the operation she came back to me with the cervix presenting at the outlet of the vagina, and I made an abdominal hysterectomy. I chose this in preference to a vaginal hysterectomy solely that I might have the opportunity to fasten up the vagina to the remains of the broad ligament. As this was done less than a month ago, I am unable to state the outcome, although her surgical recovery has been without note.

SOME OF THE CAUSES OF STILLBORN CHILDREN.

BY F. C. SPATES, M. D.

When one has a case of dystocia to manage, the first thought is the welfare of the expectant mother; of secondary consideration is the best manner to proceed to bring into the world a living child; for in most cases a dead baby disappoints the parents and on the conscientious accoucheur it has a depressing effect.

I am certain that one cause of stillborn babes is delivering by forceps before uterus is completely open, death being the result of pressure of the umbilical cord against the os or bony structures of the canal, or of a too long application of forceps to the head of child; or of too long traction on cervical tissues of child.

I am certain another cause of stillbirths is too long retention of baby in lower part of parturient canal after the head of child had emerged from the uterus; the tardiness of labor being due to rigid perineum, inertia of uterus, or feeble efforts of mother.

I delivered a live child for a midwife a year ago, but it died twenty-four hours after from apparent exhaustion as it was a long time after birth of baby before respiration and circulation was established; I found the child's head low down against the perineum and the midwife saying it had been in that condition for a long time.

I delivered a woman a few months ago under the following circumstances: She had been in the first stage of labor for ten hours, and was becoming exhausted apparently and wanted me to do something to hasten labor; the uterus was not fully dilated, but I yielded to her desires believing, as I had done before, that I could apply forceps through an undilated uterus above the superior strait and deliver with safety to mother and baby; I delivered slowly on account of condition of womb, but was disappointed with a stillborn child as a result. I feel now that I hastened the delivery too much and did not appreciate the condition of mother, but yielded to her importunities too soon.

My experience is that the average mother can endure the travail of labor a long time without showing any signs of exhaustion; consequently I believe many cases of stillbirth are the

result of too early application of forceps under similar conditions as I have just related. I certainly did not expect such a result, as I have many times conducted labor in the same manner with living children.

I will relate another experience which will enlighten us regarding another probable cause of the stillborn; the case, a primipara, was becoming exhausted from a tedious first stage and I delivered a seven-pound baby dead through a partially dilated uterus; she never felt vigorous movements any of the time and for twenty-four hours prior to delivery she had not felt any life; the cord encircled the neck twice, and the placenta came away spontaneously almost as soon as the baby was born. Query: Was death of baby due to constriction of circulation from cord round neck, or to detachment of placenta prior to birth? If so much of cord was around neck the length of cord from child's neck to placenta must be so short that in delivering the cord would either have to sever or the placenta become detached before the child could be delivered. I delivered this lady slowly for the same reason as in preceding case, viz., to give time for uterus to dilate, and prevent laceration. If I am correct in my theory regarding cause of death of child my management of the dystocia was not the cause of the stillbirth, but death was unavoidable from the umbilical cord around neck of child or from the separation of the placenta prior to its birth. We are told by those of large experience that head-last cases are hazardous to child, and all of us can verify this statement, although we have had many cases of breech and feet presentations with living children. If child is small and pelvis capacious and uterus fully dilated there is little danger to head-last cases. But if you have an undilated uterus, narrow pelvic cavity and slow birth, either footling or breech, a stillbirth will likely result. I have given some of the apparent causes of the stillborn. Some unavoidable, some doubtless the consequence of an error in judgment of the accoucheur; there are other causes of the stillborn, but my paper is too long already, so I will leave the rest of the subject to others more competent than myself to write about.

THE USES AND ABUSES OF ANTISEPTICS IN SURGERY.*

BY W. A. GUILD, M. D.

Surgery and civilization, like the tides, seem to advance with partial and periodic retrogression—the back waves checking the advancing ones. In surgery we will liken the advance of antiseptic methods to the tidal wave, moving forward with one momentous sweep, crest high above the other waves and seemingly unchecked by the undertow.

In all great movements, in great reforms, political, religious, scientific, there has always been a period of reaction. This reaction may demonstrate itself to a greater or less degree, but surely it presents. The pendulum swings forward and the same force of equalization, a hidden force, causes it to swing back.

To attempt to check the antiseptic wave would be like the endeavor of the old woman who tried, with her broom, to sweep back the tides from the shore. Just as surely as the laws of gravity govern and control the rise and fall of the ocean's bosom, do the laws of bacteriology control the success of operative surgery.

In these days of medical unrest, or diagnostic disturbances, we review with pride the achievements of our profession, even though its conclusions are theoretical and speculative, and record with proud content the marvelous discoveries of our age. We notice the trend of research, investigation, and advancement, and perceive that (except for the investigations of Samuel Hahnemann and his immediate followers), the medical world is fast drifting toward Therapeutic Nihilism. It is a reaction as logical as Puritanism, as Democracy. Twenty years, and more, ago a trans-Atlantic sage with prophetic sense exclaimed, "The medicine of the twentieth century, sanitary science and surgery." He has lived to see his prophecy to a large degree fulfilled. The knowledge of pathogenic bacteria and the use of antiseptic measures will make of surgery (what the law "*similia similibus curentur*" has made of internal medicine), a true science.

* Read before Iowa State Homeo. Med. Society at Des Moines, May 10, 1906.

In considering "The Uses and Abuses of Antiseptics in Surgery" I shall not consider those administered internally. In considering external or local antiseptics and their values I shall not trouble you with tabulated data nor comparative figures, nor cite "numerous cases."

I believe antiseptics, used with reason and scientifically, are our most valuable adjuncts, but when employed recklessly and ignorantly they may be not only of no benefit, but also a decided detriment to surgical success. The same discrimination may be exercised in the use of antiseptics as in the prescription of drugs.

The surgeon's ambition is to keep wounds of his own making free from infection, and to so treat accidentally infected wounds that normal healing will result. In the first case he eludes infection, in the latter he combats it. Always, his arch enemy, the bacterium, is present and alert. He hopes to keep from an open engagement, or failing, to kill the germ, or within its grasp, to counteract its deadly influence or at least to neutralize it.

No matter how careful the diagnosis, nor how mechanically correct the incision, dissections and placings of sutures, the micrococcus takes away the laurels, should it invade the field unconquered.

The surgeon deals mostly with pyogenic or pus-forming bacteria. All bacteria require for their growth and activity three constant conditions:

1. Moisture.
2. Favorable temperature.
3. Proper nourishment.

With any of these conditions absent, bacterial growth and activity cease. Moreover infection does not occur if these three conditions do not all present. The bodily tissues are moist and supply ideal temperature, and in injured present an excellent medium for the growth of pyogenic germs. Tissues uninjured by trauma or otherwise are never bacterial breeding places. Tissues whose continuity is broken or whose vitality is lessened by chemical or thermic changes are at once susceptible to infection.

I take the risk of wearying you with three or four definitions. Infection is the entrance of pathogenic bacteria into the bodily tissues and their multiplication there. The severity of the in-

fection is governed and modified by: (1) Resistance of the tissues to infection; (2) the virulence of the germs; (3) the number of bacteria introduced.

A germicide is a substance capable of killing bacteria.

A disinfectant kills bacteria and destroys their products.

An antiseptic is a substance capable of preventing the growth and reproduction and activity of bacteria. It differs from a germicide in that it simply prevents development and needs not kill.

An ideal antiseptic must accomplish the following: (1) It must arrest bacterial growth; (2) it must penetrate the tissues; (3) it must conserve and sustain the tissues; (4) it must be stable and not form compounds with bodily fluids.

I am impressed that a proper appreciation of antiseptics is not general. I think antiseptics are not generally abused, but that much error is made in utilizing germicides for purposes wherein mild antiseptics would satisfactorily arrest bacterial growth until reaction of the tissues was competent.

The healing process is not retarded by mild antiseptics kept in contact with the tissues, while pus production is aborted.

Normal blood itself is antiseptic in character. If the profession could only understand and appreciate this fact and strive to create conditions where, for instance, the blood stream could exercise its normal function, a great step would be taken in the direction of advance in the treatment of wounds. After all, it is the blood stream that heals the wound. So many of us seem to think that we can get curative action from antiseptics themselves. None of them make tissue, none repair. They help produce a condition where nature can assert herself.

Strong germicides intended to kill bacteria may or may not accomplish their task, but they invariably lessen the natural reactive power of the tissues and their powers of resisting infection. Many are powerful systemic poisons, and are absorbed, entering the general circulation and detracting from the already lessened reactive power of the patient.

Locally they cause tissue destruction, local death, and sloughing. Some are highly astringent and hinder the formation of the new blood channels. Some coagulate albumin, limiting their own action and checking repair. Others combine, forming insoluble, inert, albuminates when in contact with pus, blood, or any tissue, preventing further germicidal action and separating the parts of the wound.

Used even in very dilute solutions many of the popular germicides and antiseptics act as irritants and if long continued cause inflammation, induration, and desquamation.

Germicides with effervescing properties are frequently used in other places than in open surface wounds and superficial ulcers. The pressure caused by the gas not infrequently forces the infection further into the adjacent tissues.

Of course strong germicides may be used, when in purulent conditions we desire a caustic or escharotic effect. This is a mechanical ridding of the surface tissues of the infectious germs. We must decide whether the damage to the tissues and their reactive power is compensated by the killing of at least part of the microbes, before such measures are employed.

If, in preparations for surgical operations, more care was taken to conserve the healing power of the tissues than to destroy the bacteria, I declare that we would have far more rapid healing of wounds and much less pus.

I am not endeavoring to oppose antiseptic measures for securing asepsis—far be it. But I do protest against the killing of tissues to secure it. Normal healthy tissues with good blood supply are not readily infected. With a small amount of aid, nature will accomplish more than the germicides.

I believe that mechanical cleanliness, secured by thorough scrubbing with plentiful use of soap and hot water, is the most practical preparation for operative surgical work. If antiseptics are employed they should be mild and of the class that stimulate tissue growth.

In cases of suppuration, frequent continued mild antiseptic irrigation, after evacuation of pus or curettage of the pyogenic surface is the most efficient manner of combating infection.

In clean or infected wounds every effort to make the conditions unfavorable to the growth of bacteria, which does not destroy tissue cells, is warranted. Any measure which destroys the cell vitality is unwarranted.

As surgeons, our greatest foe is the pus coccus. Our allies are the natural resistance of tissues, and substances which aid these tissues to resist. We should not abuse these tissues by applying either in clean or septic cases, substance which destroys cell activity.

We can employ mild antiseptics and hold in check the bacterial multiplication and toxin production without injury to the delicate tissue cells upon which we must rely for repair.

MIDWIFERY CASES.

BY JAMES CAMERON, M. D.

It is sometimes interesting to compare one's results, whether good or bad, with the accepted standards, and with this idea I went through my midwifery notes, and have selected from them cases of occipito-posterior presentation and of ante-partum hemorrhage.

I take, then, 880 labors, representing 892 births, including twins, taking in all delivered after the seventh month, for the arbitrary reason that I keep notes of abortions and premature labors in one book and those occurring after the seventh month in another, and have used the latter just as they stood. Of these, 49 were breech or other abnormal presentations, leaving 843 vertex cases. Of these again 104 were diagnosed as occipito-posterior—that is between 12 and 13 per cent. of the vertex cases. This estimate is probably below the mark somewhat, first—because I find that the condition has been more frequently diagnosed in the second half of the series, when I was more on the alert for it, and also, I suppose, better at recognizing it; and secondly, because this being a consecutive series from general practice, no doubt many occurred and rotated before my arrival. If we could see every case, say, while the head was engaging in the brim of the pelvis, a truer estimate of the frequency could be formed; but, of course, in general practice this is not possible.

To compare with our standards, Galabin gives the frequency of right occipito-posterior as being about 15 per cent. of vertex cases, and of left as considerably under 5 per cent. Norris and Dickinson, say that almost 20 per cent. are primarily right occipito-posterior, and a little over 1 per cent. left. They therefore nearly agree in putting the total percentage at about 20. A writer in the last number of the *Australasian Medical Gazette* says 30 per cent. are posterior, and one in the *British Medical Journal* for March 10 last, gives the numbers as 10.5 per cent. in multiparæ and 20 per cent. in primiparæ. It is very important to recognize the condition because the labor is invariably longer, generally much more difficult, and there is much more likelihood of danger and damage to mother and child.

It is a fairly satisfactory working hypothesis in a normal pelvis

to suspect occipito-posterior presentation if the first stage is unduly prolonged in a vertex case, and to examine with this in mind. The first stage is longer because the mechanical difficulty of the head entering the brim is greater, and because, for some reason or other, the pains are almost invariably weaker and longer between. I do not intend to say anything as to the causation or mechanism beyond quoting from Norris and Dickinson this admirable summary. They say: "In reviewing the mechanism of posterior positions it is at once apparent that the whole key to the situation is to be found in the degree of flexion presented—that the better the flexion the more certain and the more rapid is the execution of the normal and most favorable mechanism. It is an established fact in practice that in the comparatively few cases in which good flexion is established at the start and maintained to the end, posterior labor is hardly less favorable than anterior; and that the degree of difficulty increases as the degree and persistence of flexion decrease, until we reach the fact that when flexion is lost, and is not promptly restored by art, posterior positions invariably yield long, difficult and exhausting labors for the mother and a large proportion of stillbirths among the children. It may safely be said that there is no variety of labor in which easily avoided results are so commonly increased as in posterior positions of the vertex."

The diagnosis is not easy, and must be based upon careful abdominal palpation and vaginal examination; one can often easily feel that the rounded back of the child is not in front, and that the knobby limbs are; but this cannot, as a matter of fact, always be done, and I would never hesitate to give chloroform and introduce the hand into vagina and make quite sure how the head is lying; the four sutures can be traced into the anterior fontanelle or an ear felt; this sounds elementary, but the fact remains that these cases cannot always be diagnosed by palpation, especially in primiparæ.

Bearing on the question of treatment I find that of the 104 births, 17 were born naturally unrotated, that is, with the face coming out under the pubes, and rotation was observed to take place in 49 others, delivery being natural, or aided by forceps after rotation, leaving 38 to be dealt with. It is not often that one gets a chance at these cases before labor begins, or before the membranes rupture, with the head still above the

brim. Various devices are then recommended, for example, assuming the knee-chest position daily for several days, if labor has not started, or attempting to rotate the child by pushing one shoulder back and the other forward by a series of small pushes, or to perform version if it has. I must confess to never having tried the first proceeding, and the amount of success with external rotation has been small, while as for version it is decidedly not to be recommended in a primipara, and it seems to me a question whether the chances of successful delivery after waiting are not greater than those afforded by version. If, however, one attempts either of the first two unsuccessfully, no great harm is done, and nothing further remains to be done till after rupture of the membranes. As much time as possible must be allowed, and the head will probably pass the brim and rotate forward as it reaches the pelvic floor; in a certain number of cases, however, this does not take place, and it is in these that trouble may arise; as stated above, labor is unduly prolonged, causing exhaustion of the mother, with risk of severe lacerations, and the possibility of stillbirth. It is important to allow plenty of time, as rotation often takes place rapidly when the occiput reaches the pelvic floor; on the other hand, the labor must not be allowed to go on until the mother is worn out. What is to be done? The choice practically lies between rotating manually and using forceps. Attempts at restoring flexion of the head can be made at any stage, but they often fail. I have known in a few instances the little extra help given by pressing upon the frontal end of the head during a pain to cause flexion to be followed by rapid rotation. In the earlier part of the series I used forceps oftener; from a few bitter experiences, I have learned to avoid them, if possible, at least in primiparæ. I am referring now to putting on forceps and simply pulling in those cases in which rotation has not occurred and one has decided that labor ought to be soon ended. In multiparæ the risk is not so great.

Manual rotation is safe and by no means so difficult as is often made out. The trouble is not so much to rotate the head as to keep it there when it is round. This must be done by an assistant working the anterior shoulder round, at the same time, so that the body travels with the head, or by holding the head with the hand till forceps are applied, not necessarily, how-

ever, for pulling the child out forthwith, but to keep it in position till the pains drive it down.

The total number of stillborn children out of the 104 was 6; one of them was in no wise connected with the birth—the fetus was macerated, and had been dead probably for about three weeks. Galabin gives 2.7 per cent, as the average rate of stillbirths in vertex presentations; others place it as high as 6 per cent. I have not been able to find any statement as to the percentage in posterior positions alone. From the facts that 17 were born face to pubes spontaneously, and that some form of operative treatment was thought advisable in 38 more, I conclude that the number of cases in which the occiput does not rotate, or is excessively slow in doing so, is much larger than one at first realizes, although I admit that possibly, had I had greater patience, some of the 38 might have worked out their own salvation. It is interesting to note that out of the 24 twin babies, nine were posterior presentations.

Turning now to a second subject, I find that Galabin gives the frequency of placenta previa as 1 in 534 from 49,845 deliveries; the Rotunda figures give it as 1 in 573, and the American Text-book of Obstetrics and various other authorities go as high as 1 in 1500. Accidental hemorrhage is estimated by nearly all to be rather more frequent than placenta previa. The maternal mortality is variously estimated in placenta previa from 4.5 per cent. to 23 per cent., and the infant mortality from 35 to 60 per cent., most taking the higher estimate. The maternal mortality in accidental hemorrhage is given from 4.9 per cent. in 81 cases at the Rotunda, and 11.4 per cent. from the hemorrhage alone at Guy's Hospital; and nearly 51 per cent. in 106 cases of concealed accidental hemorrhage collected by Goodell. The child mortality in all cases is given from 60 to 94 per cent. If I have not had as high a percentage of posterior vertex presentations as some, I have been unfortunate enough to get more than my share of severe cases of ante-partum hemorrhage, for in 880 consecutive labors there were no less than 10 severe cases. I diagnosed seven of the ten as placenta previa, but was uncertain about the other three, and was interested in reading the proposition that a large proportion of cases of so-called accidental hemorrhage are due to low insertion of placenta, and that diagnosis of this is difficult and cannot always be made with the finger. Of placenta previa Galabin says: "The characteristic

symptom is sudden and unexpected bleeding from the uterus without cause." Upon the occurrence of this, and the feeling with the finger the margin of the placenta inserted low in each case but one, the diagnosis was made. My ten cases were all multiparæ, in whom both conditions are much commoner. In seven bleeding occurred at or before the end of the eighth month; in the other three it was a week or two before labor was expected. Six babies were stillborn, three lived, and one was not delivered, as will be narrated, and three of the mothers died.

I think brief notes of these three fatal cases will be interesting. The first was seven and a half months pregnant. Excessive bleeding came on while driving home over a rough road in a spring cart. I found her in a condition of collapse. Placenta previa was felt and diagnosed, version done, the child carefully delivered, and the placenta removed. All bleeding stopped, the uterus contracted firmly, and she seemed pretty well for about three-quarters of an hour, and I thought she would do well, when she started to be restless, toss about, sweat profusely, and died in about another three-quarters of an hour. The second, about two weeks before labor was expected, had a sudden bleeding one evening, a fair amount of blood coming away, but not enough to affect her general condition. I was not sent for till next morning, and only then because she wanted to get up and do her work, which her husband wanted to prevent. The cervix was almost out of reach and undilated. By abdominal palpation the head could be felt over the pelvis. I did not quite see what active treatment to adopt, and urged her to stay in bed. She got up in the afternoon, however, as she felt so well, and did some work. At night bleeding began profusely, there not having been a trace since the previous evening, and in twenty minutes she was dead. This was the case in which the baby was not delivered. I have classified it as placenta previa, although I did not feel the placenta. The third, at the eighth month, had a sudden and profuse hemorrhage after a heavy day's washing, making her blanched, almost pulseless, with cold breath by the time I arrived. I ruptured the membranes. She was having pains, and as soon as the os was dilated, got forceps on the head and delivered. She lived only two hours longer. Of course the usual methods to make up for the loss of blood were also adopted.

I give these notes because I have often thought over these cases since, and would be glad of suggestions as to how they might have been more successfully dealt with. The other seven were all dangerous from excessive bleeding. The question of treatment I will not further discuss, although it is interesting to note how diametrically opposite views as to treatment of such a serious condition can be. One man teaches treatment by rupturing the membranes; another that this is dangerous because it increases the mortality; one says no plugging of vagina, another strongly endorses doing so. Evidently, therefore, there is plenty of scope for judging each case on its merits.

I would like to draw attention to one or two points in connection with less severe cases of bleeding during pregnancy, of which I have notes of 47. There were 13 in which bleeding took place at varying times from the seventh month onward; most of them, it is true, slight, yet sufficient to cause anxiety, as there was nothing to show that they would not eventuate in tragedies. All 13 had normal labor at term except one, in which after two weeks' bleeding labor took place at seven and one-half months. Then there are 31 cases in which bleeding took place in the earlier months generally about the second or third—that is to say, they were cases of threatened abortion. Twenty-three went on to natural labor at term; eight, after bleeding off and on, lost the fetus at a later stage, but before full term. There were two other cases in which, owing to the danger caused by the more or less continuous bleeding, labor was induced in one at five and the other at six months, and one remains to make up the number, in which bleeding kept up off and on during the whole pregnancy, never excessively, but still making one anxious all the time. This woman was discovered at a subsequent miscarriage to have a uterus divided by a median septum; the bleeding may, therefore, have been from the unimpregnated side. I have watched all these cases to note whether the primary bleeding had any relation to subsequent adherent placenta at term, as seems probable, but there seemed to be no such relationship. In two cases only was there adhesion of the placenta, both in the same patient on consecutive occasions; a third pregnancy, also in the same patient, in which there was no bleeding, terminating with a universally adherent placenta.

THE OPERATIVE TREATMENT OF UTERINE DISPLACEMENTS, WITH SPECIAL REFERENCE TO HYSTEROPEXY AND ITS AFTER-RESULTS.*

BY EDWIN A. NEATBY, M. D.

That the treatment of uterine displacements is not yet a *chose jugée* is shown by many facts, and by none more strongly than by the divergence of view as to the nature of the disorder. When I was in Stockholm, Professor Salin informed me that, in his clinique, retroflexions were regarded as normal. If a patient had pelvic symptoms and a mobile retroflexion without notable prolapse she was told there was nothing the matter with her womb. As to his results in such cases I cannot say. That he is not alone in his views is shown by opinions in America and Germany. Dr. Lucy Waite, of Chicago, examined 1000 women, and found retroflexions in 390; of these 15 per cent. had no gynecological symptoms, and 24 per cent. were complicated by tumors, pyosalpinx, chronic disease of the ovaries and myometritis. According to this observer "A normal uterus may lie in any position without causing symptoms, and when they occur they are due to other causes."

Similar views are expressed by Graefe, who, however, allows that it is permissible "in cases of sterility to attempt a cure by remedying the displacement."

On the other hand, another German writer (Menge) avows that all cases of retroflexion are pathological. With these differences of judgment as to the nature of the cases it is not surprising that there are divergencies in practice in their treatment.

I have before suggested a classification of cases of displacement, indicating those in which success may be attained by (1) medicinal treatment alone (with a selection of the remedies used); (2) by medicine aided by exercises; (3) by pessaries, and finally those in which operative measures are needed to assure a cure.

That there are many cases curable by drugs I have no doubt, but of the patients presenting themselves for hospital treatment, the number so curable is relatively small.

While the aid of the pessary is undoubted, it is at best only

* Presented to the Section of Surgery and Gynecology, of the British Homoeopathic Society.*

a makeshift. Klein, of Munich, reports 37 per cent. of "doubtful results" where the uterus remains in the forward position only so long as it is supported by the pessary, falling back as soon as it is removed. I have under my observation at the present time two patients, one an American lady of leisure, and the other a housekeeper in a large establishment, in whom this happens. In each of these cases I have repeatedly kept the uterus forward for a considerable period together, six to nine months, only to find after a few weeks that the symptoms had returned and the uterus had resumed the backward position.

The last named writer records 52 per cent. of cases where the uterus falls back even with the pessary *in situ*. This occurs in varying percentage with us all; and in some cases although the pessary retains the uterus in position, the patient's sufferings may persist.

With these facts before us, it is evident that there are a considerable number of cases in which non-operative measures fail to bring the desired relief.

The endeavor of this paper will be to show whether or not operation can claim successes denied to non-surgical treatment, and if so, what is the best form?

What are the chief operations which demand our attention? Four will be alluded to in passing. That of shortening the round ligaments is too well known to require any lengthened description or comment. It was introduced by our countryman (Alexander of Liverpool) about the year 1880, at a time when it was less safe to open the abdominal cavity than has been the case for ten years or more.

It has met with varying success at the hands of different operators. Its first recommendation is that it is an extra-peritoneal proceeding, and its main advantage is that it is a suspension and not a fixation. Its weak point is that when the original cause of the displacement is still acting, the ligament, which has already stretched before operation, will continue to do so after, and a relapse is not unlikely to occur. It is also occasionally a difficult operation; the round ligament is not always discoverable, even when the inguinal canal is freely opened, and when found it will not always "run" or pull freely out of the abdomen; sometimes the ligament breaks off while being pulled upon. Shortening of the round ligaments is still practiced by individual operators and by its worthy introducer.

In the 1901 Reports of the Royal Southern Hospital, Liverpool, he expresses his confidence in the method after an experience of twenty-one years. Many "chronic sufferers from old retroflexions, who have failed to obtain relief from pessary or other methods," have been cured by him, but in these cases "it is essential that the uterus should be straightened before the operation, and kept in position till healing is complete." He recommends for this purpose a "galvanic stem supported on a Hodge." Although Alexander states that the breaking off of the ligament is quite exceptional, he records two cases in his own practice occurring in one day; in one patient both ligaments "broke off hopelessly on the slightest tension," in the other the right ligament "snapped off just as he was about to stitch it."

Le Roy Broun (New York Medical Record, February 22, 1902), reports 230 Alexander operations, with two deaths "not attributable to the operation." He states, as does Alexander, that the uterus must be free from adhesions, but Alexander has lately used his operation for adherent cases after opening the peritoneum by posterior colpotomy, and separating adhesions. It is said to have no effect upon pregnancy.

This operation can hardly be said to have become general, and indeed is less often performed now than some years ago. This is due to the increased frequency and greater safety of abdominal sections.

It is perhaps natural that a small personal experience should have more influence on one's judgment and practice, than have the reports of a more extended experience of other operators.

Some twelve or thirteen years ago, I performed this operation in a few cases. On each occasion the round ligaments were more difficult to find than I expected. In one case one of them broke off, and in another one of them refused to be drawn out. It is not therefore surprising that in both these cases a relapse took place, and one of the patients submitted afterwards to hysteropexy, with the best possible results. I have not performed this operation for several years, and feel that I am unlikely to do so again.

The enhanced safety of celiotomy has led to a not unimportant modification of Alexander's operation—that of shortening the round ligament intra-peritoneally. I have not done this or seen it done. The reports I have read vary in this particular—in some the ligaments, after being folded, are stitched

to the abdominal wall one inch or more away from the uterus, while in others they are stitched to the parietes at the point where they leave the uterus. All Menge's 130 cases he reports as successful, but they should be reckoned as hysteropexies rather than as Alexander cases.

The next method requiring notice is shortening of the utero-sacral ligaments. The importance of these supports was brought prominently to notice in this country by the translation of Schultze's book on displacements; by him these ligaments are called the ligaments of Douglas or the musculus retractor uteri. They are folds of peritoneum running from the sides of the uterus at the level of the isthmus and extending outwards, backwards, and upwards to the outer margins of the second sacral vertebra. These folds are strengthened by fibrous and muscular tissue, and form the upper lateral limits of the pouch of Douglas. When intact they keep the uterus in the forward position and prevent its prolapsing. When they undergo contraction after pelvic inflammation the junction of the body and cervix is drawn upwards and backwards, marked ante flexion occurs, and the mobility of the uterus is notably lessened. When, on the contrary, they are stretched, prolapse quickly ensues, and retrodeviation becomes possible. It is to overcome this stretching that shortening of the utero-sacral ligaments was devised. It may be carried out by the vaginal or the abdominal route. Johnstone, in the *American Journal of Obstetrics*, July, 1905, reports two cases treated in this way reached through a posterior colpotomy. Both were successful. That this is a rational method of treatment can hardly be doubted, but it is liable to the same disadvantage as is the shortening of the round ligaments, viz., that after the operation further stretching may occur. Should any cellulitis follow it, however, the opposite condition (viz., contraction) may ensue, with pronounced ante flexion and fixation of the uterus.

Perhaps the most recent procedure for very aggravated cases is that devised and carried out by Martin of Birmingham. It consists in extirpating uterus and vagina, and stitching up in such a way as to bring together the edges of the pelvic fascia so as to make a firm fibrous diaphragm, extending from one side of the pelvis to the other, and having adherent to it the bladder in front, and the rectum behind. In principle, it re-

seembles an operation for radical cure of hernia. With respect to this, I have only to say that it must be borne in mind that nature has not designed the layers of fascia to meet in a central raphe, and a good deal of dissection is necessary to bring their edges into view and into apposition, and considerable tension exists during union. Such a severe operation requires for its justification a great amount of previous danger or distress, and a very radical and permanent success as its result. With exemplary candor, Mr. Martin admits that in all his four recorded cases, "the convalescence . . . was complicated with deep-seated suppuration." The ultimate result was good, but it is too soon to say how long it will last.

The only other method I propose to mention before passing on to the main subject of this communication, is vaginal fixation. This excellent operation is one of very limited applicability, being of no use in cases complicated by prolapse. It was first performed without opening the peritoneal cavity, with the result that the sutures not seldom found their way into the bladder. Subsequently the peritoneum was opened after pushing back the bladder, as in the early stages of vaginal hysterectomy. For suitable cases its results are good, but I do not propose to enter into the subject at the present time.

For the purposes of this paper I use the term hysteropexy as a generic one in its broadest etymological sense—fastening of the uterus. By ventral hysteropexy is meant stitching of the uterus to the abdominal wall.

A variety of classifications might be suggested, but the purposes of this paper will best be met by one based on treatment.

Four varieties may be named: (1) Simple non-adherent retroflexions. (2) Adherent retroflexions. (3) Retroflexions with diseases of the appendages. (4) Prolapse of uterus and vagina with or without retroflexion.

The indications for operation are those dictated by common sense. Firstly, the patient must have sufficient suffering and disability in the exercise of daily duties and the enjoyment of daily pleasures to warrant the contemplation of surgical aid. In the next place, the medical adviser and the operator must be satisfied that the sufferings are due to the pelvic lesion. Finally, minor measures, after a fair trial, must have proved fruitless, or at any rate, partial and palliative only.

Concerning the first condition, as we are yet without a "pain

gauge," something depends upon the patient's own estimate of her sufferings. Still more depends upon her position in life. A woman who is dependent upon her own exertions for a livelihood will insist more urgently on a speedy, complete, and permanent method of treatment than one with means and leisure. We must further judge of the advisability of operation by the effect on the patient's physical condition—her state of nutrition, her walking and lifting powers, her heart's action, her ability to undertake the duties of social or married life, and her sleeping powers.

As to the second condition, it is not always easy to decide whether or not the symptoms are due to the displacement. If rest considerably relieves them, and especially if replacement of the uterus and its maintenance by tampons brings temporary freedom from pain, there are grounds for concluding that the sufferings are due to the local lesion. Where neurasthenia forms a complicating element in the case, it is much more difficult to judge of the importance of the pelvic condition. Even where the general state is obviously the first in order, both of time and rank, it is highly probable that a small peripheral ailment may act as an irritant to an already weak and hyper-sensitive condition. Where neurasthenia and a simple retroflexion coexist the greatest care is needed not to overestimate the importance of the displacement, and not to give too high an estimate to the patient of the value of operation. A little later, when considering my own cases, I hope to be able to refer to one or two bearing on this point.

The third condition—the exhaustion of all minor measures—may be accepted as *de rigueur* in all cases of the first class. I may be open to criticism here, but I would give a more prolonged and thorough trial of such means to a woman of forty to fifty years of age than to one much younger. In the young woman her life lies before her, to be made or marred by her ability or inability to adjust herself to her environment. To my thinking, it is a pity and a sin to allow a young woman to drift into chronic invalidism simply in deference to a sentimental objection to operating upon her reproductive organs, especially where there is no question of "mutilation." The moral effect of an operation, with a cure immediately beyond it, is much less depressing than is a permanent invalidism, with the sexual sphere as its center and focus.

In cases of the second and third class the prolongation of a course of treatment which the result may show to have been only "tinkering," is less called for. It should be possible to estimate with some degree of accuracy what are the probabilities of success by rest, medicines, pessaries, etc., in a case complicated by pelvic adhesions. If the causative inflammatory attack is still in the near past, if there is evidence of recent exudation or of existing elevation of local temperature, then it is the inflammatory condition, rather than the displacement it has induced, which demands treatment. But given a case with a history of past pelvic inflammation, followed by pain, with a fixed uterus or with adnexal swellings, there can be no object in delaying operative measures.

In the fourth class the only word I have to say is that in cases of prolapse, far more than in retroflexions, it is the actual displacement which calls for treatment. When once the failure of mechanical aids has been demonstrated, the advisability of operation cannot be questioned. It does not even arise until medicinal therapeutics have been exhausted. Though both uterus and vaginal walls prolapse, it is mainly the vaginal descent which causes the distress. This is to be met by the usual plastic measures, varied according to the needs of each case, and carried out at the same sitting as the hysteropexy, if the patient's strength will permit.

The most important part of the subject lies still before us, viz., the consideration of the disadvantages and after-results of the operation. Before passing on to this I propose to introduce here such facts as my own cases enable me to advance, and those gathered from the articles I have read. I may record my indebtedness to that published by Andrews of the London Hospital,* by far the most informing of any single article I have come across. It is to be regretted that incompleteness of detail tends to vitiate the conclusions of all observers, or, at least, to render them less accurate and certain. No case can be regarded as properly reported where it is not clearly stated whether the uterus is stitched to the peritoneum and subserous tissue only, or whether aponeurotic and muscular elements are also included. In all my own cases the former will be here described as suspensions, and the latter as fixations. It is a little difficult not to use the latter term generically, as is so often

* *Loc. cit.*

done, but it will not be so used intentionally. By preference I use the cumbersome term hysteropexy.

My own operation may be described as a direct central suspension. In detail it is as follows: The abdomen is opened in the median line by incision large enough to admit the hand. The uterus, appendages, and pouch of Douglas are examined; the first named is brought to the surface, and silkworm-gut suture is passed deeply into its substance immediately—say one-eighth inch—posterior to the points of entry of the Fallopian tubes. This suture is utilized in place of a vulsellum for pulling upon the uterus, which is brought into a position of anteversion thereby. A half circle needle is next taken and threaded with No. 2 Chinese twist silk, the point is inserted from within outwards into the left parietal peritoneal flap 1-4 inch from the cut edge. It passes into the subserous tissue, but not into the aponeurosis, emerges again on the inner surface 1-2 inch further away from the middle line, and is then made to enter the uterus about 1-4 inch below the previous suture on the posterior surface. The suture is next passed through the right peritoneal flap, entering 3-4 inch and emerging 1-4 inch from the margin. Two, three, or four sutures are thus inserted according to the weight of the uterus and the density of pre-existing adhesions.

The fundus is usually found about one inch above the pubes. The parts are now sponged, and it is ascertained that no intestine occupies the utero-vesical pouch. The silkworm suture is now threaded again, and each end passed through the whole thickness of the abdominal wall. The fine silk threads are tied and the peritoneal wound is closed with No. 1 silk, thus entirely excluding the uterus and its sutures from the abdominal incision. The sheath of the rectus is then closed by a continuous resterilized chromic catgut suture, and finally the skin edges are adjusted with silk or with metal clips. The silkworm-gut suture is then tied; it is removed about the tenth or twelfth day.

I have been able to collect fifty-eight of my own cases, the majority with sufficiently recent news of their condition to enable one to judge as to the after-results of the treatment. Of these, fifty-one were done more than a year ago. The remaining seven, done within the last twelve months, are introduced to give an idea of the condition a few months after operation.

My first operation was done in 1897, after the failure of an Alexander. Until the year 1903 I saw and heard of this patient more or less regularly. The physical finding was always good, and she was able to do the arduous work of a nurse-maid. She was a single girl aged twenty-four, and had borne a child many years before; she is counted as married in this list. She was unable to continue earning her living before the operation. She was the youngest patient, and the eldest was a woman aged sixty-four, with bad procidentia.

On one patient the operation was twice performed. A woman of forty, with a pelvic lesion sufficient to warrant hysteropexy, is practically past the child-bearing age. One of my cases done in 1899, at the age of 38, miscarried in the middle of 1900, sixteen months after the operation—when thirty-nine and one-half or forty years old. This patient (No. 4) has had five children, the last fifteen months before the operation.

Of the series, forty-three patients were during the child-bearing age, but twelve were single or widowed, and three had had double oöphorectomy, leaving twenty-eight presumably likely to have children.

Referring to the classification already suggested, we find thirty-five cases of simple retro-deviations, seventeen with adhesions, three of which were complicated by prolapse; twenty-eight had prolapse without adhesions.

My impression is that a larger proportion than the notes state were adherent cases, but I cannot now prove this belief.

Thirty of the patients had abnormalities of the appendages, either cystic or inflammatory, sufficiently pronounced to be commented upon in the notes, and in many instances these conditions were serious enough to warrant removal. In eight the left ovary was removed; in three the right; and in four both. It may be remarked here that while the operation of ventro-suspension in simple retroflexion is one of the easiest, safest, and quickest for which celiotomy is performed, it is far otherwise when the uterus is bound down by dense and broad adhesions, and the appendages are embedded in organized inflammatory products. The separation and removal of these are often extremely tedious, and the shock of operation is proportionate to the extent and density of the adhesions. I must confess to some surprises in the matter of uterine and adnexal adhesions when the abdomen has been opened. This is espe-

cially the case with light adhesions which are not enough to immobilise the structures or to form any bulky mass. They may, nevertheless, be enough to prevent recovery without operation. In no case have I failed to bring the uterus forward, but in one (No. 16), the backward pull of the scar-like intrapelvic tissue caused a failure to ensue and the uterus to reassume its flexed position. Pelvic inflammation and its results bring the gravest difficulties in this operation—indeed, in many of the cases the displacement and the hysteropexy are but incident in a serious case of salpingo-oöphoro-peritonitis.

The general health suffers in proportion to the severity of the inflammation, and the degree of original sepsis acting as a cause. Constant pain, dysmenia, menorrhagia, dyspareunia, dyschezia, loss of flesh, of appetite, and of domestic happiness, form items of varying prominence.

Leaving aside these intrapelvic complications, prolapse of the vagina and uterus form another large class of cases in which ventral fixation or suspension is called for. The patients have considerable local discomfort, and not seldom their ability to work is diminished, but their bodily health is not so seriously impaired as in those first dealt with. From the point of view of the surgeon, they are chiefly noteworthy because they necessitate a more prolonged operation or chain of operations, involving not seldom two sittings. In cases where the uterus is heavy, the endometrium unhealthy, and the cervix lacerated and hyperplastic—as so often happens—a preliminary curetting and trachelorrhaphy may be needed. If the symptoms are not urgent it may be permissible to see if this procedure and the rest enjoined thereby are enough to cure the case. If there be much prolapse at the same time—and prior to the hysteropexy—repair of the pelvic floor should be undertaken. It is this condition of prolapse and procidentia which forms a chief hindrance to a full and permanent cure. There is a not very uncommon class of cases which goes by the name of “relaxation of the pelvic floor” or outlet, which are difficult to account for and to cure. They are supposed by some writers to be due to a congenital defect. In single women, and sometimes even in young girls, without any known cause, an absolute procidentia occurs. The laxity of the parts is such, that there appears to be no tone or contractile power present, the uterus lies outside the vulvar orifice, and the immensely redundant vaginal

walls form a huge mass as large perhaps as two fists. The walls are thick, when returned they lie in heavy folds in the pelvis, and appear to be truly hypertrophied, pulling down the uterus by their weight. The rima pudendi is so dilated that a hand may be as readily inserted as at the close of parturition. These are the cases which tax the ingenuity of the surgeon, and which have led to so heroic a measure as that advocated by that very able operator, Christopher Martin. One of my own cases, a cook (No. 19), was a single woman, aged fifty-five years. Her procidentia was so bad as to oblige her to give up her work. As far as I could learn she was a virgin, and certainly had not borne children. In her case a very extensive anterior and posterior colporrhaphy and narrowing of the vulvar orifice, in addition to ventro-fixation, resulted in great improvement. But I cannot honestly call it a cure, for some three years after she came back with a threatening of return of prolapse of the vagina, and was given a ring pessary. I have not seen her very lately, but her reply to my inquiry shows that she at least is not dissatisfied. She says: "Before the operation I was quite unable to walk without much discomfort, and could not continue my daily work. Less than six months after operation I was working as much as ever."

In another case which struck me very much at the time, I experienced a still greater failure. The patient was a young girl sent to me by Mr. Frank Shaw, and operated on by the same method. I have seen other cases in young subjects since, but none more surprising to me. As I forget this girl's name, I have not been able to look up her notes or include her in this list. All I can say is, that I believe within a year Mr. Frank Shaw told me she had again been obliged to resort to mechanical support. The gain in both these cases seemed to be limited to their becoming able to retain a useful pessary, which before was impossible. I cannot help thinking there is an essential difference between this condition and that of a procidentia due to the traumatism of a large family. For these cases, Lefort devised the operation of forming a median longitudinal raphé uniting the anterior and posterior vaginal walls, thus making a double vagina. Richardson (already quoted) believes that his suspensory operation enables the vaginal walls to regain their tone, and avoids vaginal narrowing. In my opinion it might do so in these last-named traumatic cases, but not in the aforesaid "relaxed pelvic floor" of congenital or trophic origin.

Prolapse and procidentia are not frequently associated with adhesions. Any considerable degree of adhesion would prevent the prolapse. But three of my cases had retrodeviation, prolapsus, and adhesions associated. Eight patients had a complete procidentia, some with deep ulceration of the vaginal wall or uterine cervix. Twenty-three others had well-marked prolapse, mostly with retroflexion. For none of these would vaginal fixation have been of any use. I shall allude to the permanency of these combination cases under another heading.

Next in order let me consider as a group those in which single women were operated upon. I place these arbitrarily in one group, because on examining them together, their results seem less satisfactory than any other grouping I could have made, and that consequently there may be a lesson to be learned from them viewed together, which would be overlooked if they were regarded merely as isolated units.

There are nine cases of single women who had not borne children. Of these, one (No. 19) has been described as one of relaxed pelvic floor and does not require further consideration. No. 7 is that of a young woman operated upon in 1899, aged thirty-one. She had sacral pain, dysmenorrhea, pyknuria, with dysuria, and retroflexion. Soon after the operation she went abroad, and I lost sight of her until this year, when I heard from her, and she reported herself as in no way benefited by the operation. For three years a stitch was working out, and she had pain and discharge connected with this. When the stitch came away the wound healed at once, but the last two months she has had almost unendurable menstrual pain "of a different kind." "While sneezing something seemed to give way, and this acute pain came on." She says, however, she is able to get about and do her work.

No. 10 was operated on in 1900, at the age of thirty-four, for left iliac pain and bearing down, associated with retroflexion and prolapse of left ovary. She was always better if she could wear a Hodge pessary, but that was not possible for long together on account of pressure on the ovary. I have seen her on and off since, and in December last found the uterus in good position. She reports that all the symptoms for which the operation was done have disappeared. But she is still pale, thin, ill-nourished, and melancholy—profoundly neurasthenic.

This condition is but little bettered, though I believe she gets through a great deal of heavy domestic work.

No. 11 was done in 1900; this patient was also thirty-four years of age. She had bearing down and dysmenorrhea, associated with retroflexion and prolapse of both ovaries. For several years after operation the bearing down continued, but has not been experienced for the last twelve months. The dysmenia is cured. She reports herself as weak; she has gained "relief but not a complete cure."

Case 16 is worth a fuller report. She was twenty-eight years of age, single. She was admitted suffering from dysmenia with profuse menstruation. Uterus was retroflexed. In June, 1901, I performed ventro-suspension, after breaking down adhesions and removing the right ovary. Patient made a good recovery. I saw her in January, 1902, and found the uterus again retroflexed, with a return of dysmenia and menorrhagia. There was also pyknuria and dysuria, with pain in abdomen. In February of that year I reopened the abdomen and stitched the posterior surface of uterus to the abdominal wall (peritoneum). There was no trace of band or adhesion connecting the uterus and the parietes. The left ovary was found to contain a large hematoma, probably a lutein cyst, and to be imbedded in adhesions; it was accordingly removed. Recovery was slightly retarded by a stitch abscess. In January, 1906, patient wrote in answer to inquiry, "I have benefited by the operation, have kept fairly well this last year, only had one reminder of my old trouble, and then I think I caught cold. Periods have quite stopped, not been on for nine months."

This patient was a poor miserable subject, but in spite of her relapse and second operation being necessitated, she made a better final cure than some of the others in this group.

No. 27, aged thirty-five, operated on in 1903 for pyknuria, dysuria, bearing down, and sacral pain and dysmenia, associated with retroflexion. In December of last year I saw this patient and found the uterus forward and sharply ante flexed. She was very much better as regards the symptoms just named, but complained of slight returning sacral pain and of a vast assemblage of distant neurotic symptoms. She remained thoroughly ill-nourished.

No. 31, aged twenty-nine, operated on in 1903 for sacral and right iliac pain with retroflexion and vaginal prolapse, has sent

no recent report. This case was complicated by two small myomata for which myomectomy was carried out. The immediate result was good.

No. 50, aged twenty-six, was conjointly under my care and that of Mr. Knox Shaw, who removed the appendix vermiformis for a persistent pain in the right side. While in the hospital she was found to have menorrhagia and a retroflexion, for which, at the same sitting, I performed ventro-suspension in June last year. I saw her a few days ago, and found the uterus forward and movable, but there was no improvement in menstruation. She is less constipated than before operation. This patient also is pale, thin, and tall.

No. 56, a patient of Dr. Vincent Green's, aged thirty-two, was operated on in January, 1904, for dysmenia, retroflexion, abdominal pain, and general inability for mental or bodily exertion. When last seen the uterus was in good position. Appendicectomy and suspension were done at the same sitting, and a good immediate recovery took place. Dr. Green reports, "I attended her within six months of her operation for a slight return of the symptoms, but since then she has been well. I saw her last week, and she expressed herself as being quite well, and she certainly looked it."

The consideration of this group of cases will increase my cautiousness in operating on neurasthenic patients, or at any rate in the promises I make as to the part of their sufferings likely to be removed by the operation. It seems to me that all these require, in addition, a prolonged course of treatment for their neurasthenia. I say in addition, for it is probable that without it the results would soon be undone by the persisting peripheral irritation. The more meager the physical indications, the less likely is the operation to be a success, and this is especially so in neurotic single women.

No. 44, a neurasthenic patient, aged thirty-eight, married, the mother of one child, suffering with pyknuria, sacral pain, bearing down, retroversion, vaginal prolapse, prolapse of both ovaries (one cystic). In spite of a troublesome stitch abscess, she reports herself as having benefited by the operation, and able to do her work "fairly well." Her medical attendant, Dr. Clifton Harris, volunteered the statement that "her general condition, which was neurasthenic, has greatly improved." Apart from the stitch abscess he says, "the operation has been

entirely successful." This patient, though neurasthenic, was not one of the thin, anemic, ill-nourished type.

A few words now as to the immediate general results of my cases. Of the fifty-eight reported, convalescence was complicated in two, by thrombosis of the saphena vein, the stiffness from which, in one, lasted some years. In this (No. 5) there were no adhesions and the case was quite simple and quick. In the other (No. 43) the patient had proclitica. Anterior and posterior colporrhaphy and a myomectomy were performed at the same time, but the results of the thrombosis were speedily got over. In the first of these two cases "fixation" was stated to have been performed, and in the second suspension.

In two cases there were stitch abscesses before leaving the hospital, and in one a hematoma of the incision. One patient (No. 57) had pneumonia during convalescence at Eastbourne. I did not see her and do not remember the cause of it. One patient, who had a pyosalpinx which ruptured during removal, developed a pelvic abscess which burrowed into the thigh and required opening like a psoas abscess. This prolonged her stay in the hospital some weeks. In this case of course the hysteropexy was a mere incident. The patient left the hospital weak, but quite recovered from the operation, and reported herself recently as having very much benefited; she is able to walk well, is in general good health, has had no return of pain, and has gained flesh.

All the rest of the cases made a good recovery at the time. I am happy to say I have had no fatality in a hysteropexy, whether done for simple displacement or conjoined adnexal disease. In eight cases the operation was accompanied by both anterior colporrhaphy and perineorrhaphy; in five by colporrhaphy only; in three by appendicectomy; in thirteen by removal of one ovary, and in four of both; in nine by curetting (mostly associated with some other vaginal operations); in ten by repair of the cervix; in two by myomectomy; and in one by operation for hemorrhoids. It will be seen, therefore, that many of these were tedious cases. They were not always done at the same sitting. Thirty-six were found to be completely successful after a length of time varying from nine years to six months. Of fifteen I have no report sufficiently recent to enable me to say anything definite as to remote results; in six I regard them as poor, even though the uterus remains in good

position; and in one the patient, whom I have not seen, says she has received no benefit.

As regards permanency of cure of the displacement, in one instance the uterus relapsed; in another a certain degree of retroversion had taken place, but I think this was due to the sutures being placed in the fundus and not in the posterior surface. In the rest, as far as I know, the uterus remained in good position. The chief failure as to permanency refers to the vaginal walls, to which reference has been made.

I may here hazard the opinion that in a number of cases where the uterus is found to be in good position, but mobile, no adhesion took place, or only a temporary one. This and the stitches may have acted long enough to allow a return of the uterus and its supports to a normal condition. I have only re-opened the abdomen in one instance, and no bands were then found.* Other operators have found bands of greater or less length and density suspending the uterus. Having dwelt at some length on the unsatisfactory cases, I may be allowed to narrate some instances as types of the more gratifying majority.

No. 42, aged sixty-four, complained of bearing down and sacral pain. On examination there was found to be complete procidentia. The vaginal wall was also hypertrophied, redundant, and ulcerated. In September, 1904, I performed a posterior surface suspension, and at the same sitting anterior colporrhaphy, perineorrhaphy, and trachelorrhaphy. This patient, though an elderly woman, made an excellent recovery. In January, 1906, she wrote, "have better health than have had for many years."

No. 15, married, aged twenty-seven, suffered from bearing down and lumbar pain, dyspareunia, and dysmenia. Period was irregular and profuse, and uterus was retroflexed. In June, 1901, I did a posterior surface suspension, and at the same time curetted and repaired the cervix. Both ovaries were found to be prolapsed. Patient made a good recovery. In August, 1903, I saw her, and found the uterus forward and high up, no dyspareunia. In January, 1906, she wrote, in answer to my inquiry, "The operation has made a woman of me, for which I am very thankful. I never was so well before. I only feel a little pain when I get cold, and at my

* Since writing the above I have had to re-open in a second case, and found a long cord-like band, about the size of a No. 4 or 5 silk ligature.

periods. I am not always regular, sometimes three weeks, sometimes six, but that does not seem to hurt me."

I have presented some facts as regards permanency drawn from my own patients. This is a point on which little stress has been laid by previous writers. It may be that my numbers are too small to enable others to form an opinion—such as they are, I leave them for my hearers' consideration. My own impression regarding this point is sufficiently clear for the narrative. Perhaps the immediate sequel will suggest that in some instances the results in other hands were a little too permanent! I have earlier on stated that of my series twenty-eight married women were at a child-bearing age, and only four pregnancies ensued. One ended in abortion, the next in a natural labor with twins, a third in a natural labor, and the fourth has attained the fourth month without any unusual pain or trouble.

There are some remaining disadvantages and dangers attributed by various speakers and writers to this operation. They are: (1) pulmonary embolism—a possibility after any major operation, not more prominent here than elsewhere; (2) peritonitis, sepsis, stitch abscess; these may be classed together, for probably the peritonitis and the stitch abscess are due to a mild local infection from imperfectly sterilized ligatures and sutures—a vanishing danger as our methods improve. Of general sepsis I know nothing in these cases, and presume, if it happened, it would be from some damage to the intestinal walls during the separation of adhesions, or infection from the rupture of a pyosalpinx, etc. Nevertheless, the chance of such complication seems to me less than in any other laparotomies when the cases are "simple." (3) Hernia is less likely to occur, because the fundus is in itself a protection. In only one of my hysteropexy cases have I found a hernia of the scar recorded, but I think in the early years, before the introduction of the three-layer suturing, others must have occurred which have escaped record; (4) pain through fixity of the uterus, noticed during coughing, sneezing, or other straining efforts, is not infrequent in the early months after operation; similarly I have met with (5) pyknuria, due to the same cause and of temporary duration; (6) parametritis would be explained by the remarks already made on sepsis. I have seen it only in the case of pyosalpinx recorded.

Attempts have been made to indicate the length of time

necessary to pursue mechanical treatment before operation. Each case must be treated on its own merits. I fancy the tendency is to persevere too long with such methods, until the condition is aggravated, sepsis induced, and the patient weakened. Moreover, it is within the experience of us all that patients get careless and sometimes forget the existence of the pessary, which may be found to have penetrated the bladder, and require to be literally dug out of its burying place in the vaginal and vesical walls. I may say, as regards the majority of my own cases, they had had a wearisome period of previous treatment, owing to the pressure on my hospital beds.

Very briefly let me summarize: Many cases of displacement require operative relief where other methods have failed, or are inappropriate. In the great majority of them hysteropexy is the most suitable operation. The variety always to be selected during active sexual life is direct suspension; where prolapse or procidentia co-exist, extensive vaginal plastic operation must be carried out, or perhaps Richardson's operation. The danger of dystocia is largely due to fixative instead of suspensory methods; where relapse occurs, it is usually in the vaginal and not the uterine element where failure takes place. Neurasthenic cases, especially in single women, should be undertaken with reluctance and caution.



PREMATURE SEPARATION OF THE PLACENTA FROM ITS NORMAL POSITION.

BY W. R. NICHOLSON, M. D.

The diagnosis of this condition, often referred to as a concealed accidental hemorrhage, depends upon a group of symptoms none of which are diagnostic alone, nor of a nature to cause great alarm upon the part of the attendant when seen in their incipency. Indeed a case may, as in an unreported instance known to the writer, show but one symptom, that of pain, until it has progressed to a degree precluding successful treatment. It is therefore of the most vital importance that the practitioner should be in possession of very clear ideas upon the subject, in order that the occurrence of these somewhat vague symptoms may attract his attention and that he have a definite plan of treatment which he may put in operation as soon as there be an indication for interference.

It appears to me from my own experience and from a study of the literature that there are two symptoms which, while neither are diagnostic and both may occur in other conditions, should nevertheless be considered as suspicious whenever met with. These are pain, of the character described above, and bleeding from the genitalia, encountered at any time during pregnancy. In other words, it is wrong to attach great importance to shock as a means of diagnosis since if it is allowed to become well marked before the diagnosis is made it will, in most cases, be but a matter of scientific interest to make it at all. If the possible import of the two above mentioned signs be remembered, the practitioner will be in a position to watch carefully for the further development of the symptom complex of the condition and to institute treatment as soon as a sufficiently sure diagnosis can be made. Another important sign is the peculiar and rapid enlargement of the uterus, well shown in the second case reported by me, associated with a marked tenseness of the wall. To my mind the most important symptom in the cases of complete concealment is pain, and any woman who presents an aberrant form of pain during her pregnancy, particularly if near term, should be looked at with suspicion. These cases of complete concealment are the most difficult of diagnosis; indeed the diagnosis in the early stages can be but provisional. Those cases associated with more or less frank bleeding, or even only the discharge of serum, present less difficulty. Here the main source of error is that they will be considered as cases of placenta previa or threatened abortion. In them the vaginal examination will go far toward clearing up the diagnosis, as the finger can be inserted within the cervical canal as a rule, thus doing away with the question of placenta previa, while the absence of the characteristic pains of labor ought, even if the peculiar form of pain noted above be present, to prevent a mistake with regard to the latter condition. I cannot see that the differential diagnosis between premature detachment and rupture of the uterus is one to offer any great difficulty.

Even at the present day there is a marked lack of definite knowledge in the mind of the general profession with respect to the treatment suitable to this emergency. This may well be due to the fact that although, as a pathological entity, the condition is not an unusual one, that nevertheless cases of a

marked severity are decidedly out of the common, and so, the needful individual experience being absent, deductions based upon personal knowledge cannot be expected. In addition there is still a good deal of haziness in the mind of the general practitioner as to the possibility of the occurrence of premature separation of the placenta, the majority of all cases presenting the symptom of ante-partum bleeding being diagnosed as instances of placenta previa, while the rare types of separation, without external bleeding, are not, unless the cause is revealed by a post-mortem, correctly diagnosed in the great majority of instances. In the consideration of the treatment of these cases there are two minor measures which it will save time to consider at once in order to save repetition, namely, the reasons for and against the rupture of the membranes and the applicability of the vaginal tampon in the treatment of this condition. Both of these methods demand the respect due to age, since they figure in the treatment of all the early cases, along with the administration of ergot, but they do not deserve consideration otherwise. The membranes, it is to be insisted upon, are to be preserved in all cases until the cervix is so dilated that there is no doubt but that delivery can be readily effected after their rupture. Formerly, there was a distinct school that advised their rupture at the earliest possible moment, in order to cause contractions of the uterine muscle, with the aim of inducing hemostasis, dilatation of the cervix, and so a more rapid termination of the birth. Many reports are given which appear to show this to be a proper manner of treatment, but upon careful study it is apparent that the successful result took place in spite of, and not because of, this interference. If labor be in progress, rupture of the membranes may be strongly indicated, but in the absence of true contractions it is evidently futile to depend upon excitation due to the escape of the liquor amnii, since, while awaiting the advent of the pains, there is ample time as a rule for the woman to die a half-dozen times. Last and not least it is to be remembered that the intrauterine pressure, if preserved, may act as a possible means of reducing bleeding from the wall of the organ. As an offset to this last statement it is never to be forgotten that the uterus does not constitute a plenum, the old idea which filled the obstetrical world with discord in times gone by, and so it is to be remembered that with intact membranes there may be a fatal concealed bleeding. It

is thus seen that nature is often helpless in the presence of this emergency, and that a fatal outcome may result unless correct surgical principles are put into action and the bleeding vessels directly checked. It is hardly needful to say that the tampon has no place in the therapeusis of this form of bleeding since it can exercise no direct influence upon the bleeding vessels, while as an exciter of cervical dilatation it is last in the list of adjuvants.

It is clearly to be realized that the actual treatment of a marked case of premature placental separation is simply the emptying of the uterus as quickly as may be consonant with the safety of the woman, and of the woman alone; the child need not be considered. I would not be understood as implying that all or even the majority of cases demand this radical line of interference, the series of sixteen cases reported by Luig with no maternal mortality is alone a sufficient answer to any such idea, since all of them were treated in very conservative fashion. These were, however, but mild instances of the condition, with but little hemorrhage either internal or external, and were comparable to the first case reported by me. The marked examples of the condition, which as I have said are fortunately rare, demand a different plan of action associated as they are with dangerous hemorrhage.

With reference to treatment, I would divide the severe cases occurring late in pregnancy or at term into two groups, viz., those in which, in the presence of considerable bleeding, the cervix is found to be either dilated by the presence of actual labor* or in the absence of labor easy of dilatation, and second, those cases which, with considerable bleeding offer an unobliterated and rigid cervix the dilatation of which would consume much time.

For the first of these groups the indication is to complete the dilatation by the use of the rubber bag, the dilator of Bossi, or by manual dilatation, according as the preference of the attendant, and the various degrees of necessity may indicate,

* It may be well to call the attention to the fact that care must be taken to distinguish between the presence of true pains of a dilating value and those due to the distention of the uterus by the collection of blood within the cavity. The latter are continuous, of a tearing or bursting character and have absolutely no value as dilators of the cervix, since they are not in any sense associated with muscular contractions.

the actual delivery of the child being secured by forceps, version, or craniotomy. It is a good rule to perform craniotomy in such cases upon relatively slight indications, as the life of the child is practically always destroyed in the type of case under discussion. Unfortunately, however, the above methods will not suffice to meet the demands of those cases which fall within the second group, namely, those associated with a rigid unobliterated cervix. In such cases in the presence of grave symptoms there is no time for a slow dilatation by art or nature, for if the amount of blood appearing externally is not alarming, there is still no way to determine how much has been poured out within the uterus, nor, moreover, how soon the external bleeding may assume proportions which will immediately threaten life. In these latter cases no one can feel secure until dilatation has been secured, since until then there can be no attempt made to check the bleeding. As has been said, it is out of the question to use the ordinary means to bring about the necessary dilatations of the cervix, for the reason that they demand too great an expenditure of time and consequent loss of blood. In the light of the foregoing it will be evident that the cases of this group are proper subjects for the operations comprised under the term of *accouchement forcé*. I believe that the indications here are best met by the method of Bossi, pursued until a diameter of about 6 cm. is attained, and then followed by the so-called vaginal Cæsarean section, the operation of version, craniotomy, or forceps being employed to deliver according to indications. I believe, however, if a case of the last mentioned group be met with under unfavorable circumstances, that it might be found better to deliver at once by abdominal Cæsarean section, since I am certain that the latter can be more safely carried out by a good operator, in the absence of good assistance, than can the former relatively more complicated method under unfavorable conditions. If done by the abdominal route I think that a hysterectomy should follow when possible, as in many cases there is a marked degeneration of the uterine wall, with associated endometrial change.

Current Comment.

G. L. Hall, M. D.:

I can suggest nothing of more importance in *the management of the case following delivery* than strict attention to the position of the uterus in the process of involution.

I am convinced from my gynecological experience that this is very much neglected by those who attend women in labor. It is surprising and altogether illogical that the lying-in woman should be compelled or even allowed to remain on her back during the process of uterine involution. Take a woman who before impregnation had a retrodisplaced uterus and permit her to maintain the position of dorsal decubitus following delivery; it naturally results that the heavy organ will gravitate and will assume its old position to the annoyance and discomfort of the patient.

Nor is it necessary that the patient should have had a backward displacement of the uterus for a like result to follow a like cause. The ponderous uterus, with its ligamentous supports in a condition of subinvolution, needs little encouragement to fall back into the hollow of the sacrum, which, if not properly detected and corrected, leads to months—yes, even years of discomfort. This should not be and will not be in the hands of the painstaking obstetrician. Within the first two weeks following confinement, if at any time the uterine fundus cannot be felt behind the symphysis pubis, suspicion should be aroused as to the position of the organ, and with sterile hands vaginal examination should be made, and almost invariably a retroversion or a general sagging of the uterus will be detected. My own method in trying to avoid this condition is to instruct the nurse to keep the patient off her back, especially after the first few days following delivery. I also explain to the patient the importance of lying on her sides with the upper knee in advance of the lower, thus tilting the pelvis toward the front and abdominal contents down. In addition to this precaution, the patient assumes the knee-chest position daily, beginning about ten days after the birth of the child.

About a quarter of a century ago the French obstetricians

formulated the practice of allowing the parturient woman to leave her bed within a few days and assume, in part, her household duties. A trial was sufficient for its condemnation. Nothing like it has been tried in this country, save by a sect of religious healers of the present day.

Criticism of such a practice must not be construed into an objection to the woman assuming the semi-erect posture upon the commode for the relief of bladder and bowels. The position favors the passing of clots and drainage to the well-being of the woman, and often a threatened sapremia is aborted by this simple process.

♦ ♦

W. J. McCardie, M. D.:

I may mention some of the *indications for use of ethyl chloride*.

First and most safely it is indicated as a preliminary to etherization, especially when it is early mixed with a gradually-increasing quantity of ether administered from a regulating ether inhaler. When thus administered struggling and excitement are conspicuous by their absence, and blueness in some 2000 cases I have never seen. Used by itself ethyl chloride may be administered for short operations, lasting up to five or ten minutes, when it is not wished to give ether or chloroform in country practice where gas is not available, and in hospital practice when fuller muscular relaxation or deeper anesthesia is needed than is afforded by gas; as, for example, the reduction of a dislocation or trimming up of mutilated fingers. Short examinations or operations in gynecological work are often facilitated by its use, and it is also not uncommonly an advantage in brief operations in midwifery. In eye and ear work in the majority of short operations ethyl chloride is far preferable to nitrous oxide. I have administered it for five cases of excision of the eyeball. In my opinion ethyl chloride is especially suitable as an anesthetic in operations for the removal of adenoids and tonsils when performed by an expert, owing to the facts that the length of anesthesia, namely, one to two minutes, is usually quite enough for the operator, and that recovery is speedy. For most very short operations in children, under about eight years of age ethyl chloride is usually to be preferred to nitrous oxide.

Since ethyl chloride approximates rather to the major anes-

thetics than to nitrous oxide in its action, precaution should be taken in administration. The patient, whenever possible, should be prepared. Since it is not a powerful stimulant I would strongly advise all who use it to administer from an ether inhaler, so that in exceptional cases, where the patient is weakly or of bad type or the operation proves unexpectedly long, ether, which should always be carried as well, may be added to the ethyl chloride. In most cases before the narcosis it is desirable to insert a mouth-prop in case jaw spasm arise. It is not, I think, advisable to change from ethyl chloride anesthesia to that of chloroform, for the same reason that it is unwise to change from ether to chloroform, unless during distinctly light anesthesia. The rapid transition from a drug which markedly stimulates respiration and probably lowers blood pressure, to another which markedly depresses both respiration and circulation may be dangerous. It is besides difficult to properly time the period of transition.

Since ethyl chloride quickens and deepens respiration and increases vascularity it should not be used when there is already much obstruction in or about the air passages, and especially when the obstruction is in the larynx.

I have been lately allowing in all cases a breath or two of air as soon as the patient's breathing became regular, particularly in weakly people and patients of what I may call "bad habit" from the anesthetist's point of view. I again allow a breath of air shortly before the removal of the mask in single-dose cases.



Arthur S. Vallack, M. D.:

I purpose to say a word upon the subject of *treatment of puerperal sepsis*. The point which chiefly needs emphasis is that in pure staphylococcal or streptococcal infections, the uterus should be left severely alone. The matter resolves itself into a struggle between the cocci and the tissues. Any surgical measures at any rate short of pan-hysterectomy, cannot possibly affect the micro-organisms which have already invaded the uterine walls, but such operations are quite capable of severely injuring the tissues. The same applies to irrigation with antiseptics.

In the case of sapremia due to saprophytic or semi-saprophytic organisms, it goes without saying that the uterus ought to be cleaned out, but this should be done with the least possible

violence compatible with thoroughness. The fingers should be the agent chiefly used, and if these have to be supplemented by the curette or ovum forceps, careful digital exploration should be continued throughout the operation, both to insure complete removal of decidual remains, and in order to avoid injuring the rest of the endometrium. As rather a fine sense of touch is needed, I think that it is advisable not to wear rubber gloves. In spite of its evil smell, the matter in these cases is not of high virulence. Nevertheless, it would be safer for the doctor to wear gloves in doing any surgical work for a week afterwards.

To those not accustomed to use rubber gloves, the following hints may be useful:

1. Film gloves are not necessary, the thinner kinds of white rubber gloves answer very well.
2. A dry atmosphere destroys rubber. The gloves may be kept in an air-tight tin accompanied by a large damp swab.
3. No grease or vaseline should be used, it is fatal to rubber.
4. The gloves are sterilized by boiling in plain water (no soda) for ten minutes in a closed vessel. If they are boiled in a linen bag, it will do away with the danger of scorching them.
5. The hands are easily introduced into the gloves by being first well lathered with soap.

♦ ♦

John McMullen, M. D.:

The following incident has a bearing on the views of those who advocate non-interference in cases of *occipito-posterior presentations*.

I had an urgent call to a village four miles distant, and, galloping across country, found that the patient was a woman collapsed from prolonged labor, with a hot, dry vagina. Vaginal examination showed there was an occipito-posterior presentation, and that the infant's nose was firmly fixed against the pubic arch. As the patient was *in extremis* and immediate interference was necessary, I pushed the child steadily backwards and upwards with my right hand, and, placing the left in the rectum, I pressed on the occiput, so as to flex the child's chin upon the sternum; in a moment the child was shot into the bed.

Here was a case of occipito-posterior presentation left practically to Nature, but in which the patient undoubtedly would have succumbed had Nature's treatment been left unmodified by art.

G. Baughman, M. D.:

Some regard *eclampsia* as an acute infectious disease running a definite course; others, particularly the English authorities, hold that it is due to a deficiency of thyroidin and administer thyroid extract to overcome that deficiency. The older writers laid great stress on the inability of the kidneys to eliminate the toxins from the body, particularly the nitrogenous waste-products. More recent investigators are rather of the opinion that the primary seat of trouble is the liver. This organ has been degenerated to such an extent by some poison manufactured either by the fetus or by the mother that the food and poisons from the intestines, which are chemically changed in the liver, and no longer acted upon, remain in the blood and add their poison to the existing one.

While it is pretty generally believed that eclampsia is a toxemia with the most important pathological changes in the liver, it is even better supported by pathological facts that hyperemesis in a toxemia with its principal lesion in the liver.

. There are some who claim that the cause of the two is the same, and that if the poison exerts its influence early, fatal vomiting will result; if later in pregnancy, the woman will have eclampsia. I do not believe that our present knowledge will justify this conclusion.



J. H. Carstens, M. D.:

To sum up, the *stem pessary for amenorrhea and dysmenorrhea* is the most useful mode of treatment, and indicated when we have to bring on a regular menstruation where it is absent or occurs at long intervals. The same may be said of those cases where the flow is scanty and various nervous symptoms are produced, a condition often found in fleshy women; in dysmenorrhea, where there are no other pathologic conditions, but only that state commonly called neuralgia, or where we find a small uterus or especially cervix, a condition often found in middle-aged unmarried women who have for five or ten years menstruated normally. It is also valuable in slight flexions or displacements with recurring stenosis producing sterility, and will sometimes cure, if I may use that expression, the last named condition. The counter indications are acute or latent pelvic inflammation of whatsoever kind it may be. I must especially and emphatically warn against this condition.

If there has been inflammation of the tubes or ovaries, or if there are adhesions, the stem pessary should not be used. The greatest care must be exercised on this point.

Any general practitioner is able to introduce a stem pessary; no specialist is required.

The stem pessary will generally cure amenorrhea after all other means have failed. It will develop an infantile uterus and enlarge a prematurely atrophied one, and restore a super-involucional womb to a normal condition. It will cure most cases of intractable dysmenorrhea, where no special pathological condition can be found. If worn for six months or a year it sometimes cures sterility.

All inflammatory conditions about the pelvic organs must be rigidly excluded before it is used, and the same aseptic precautions should be taken during its introduction, as a surgeon would with the most complicated case of abdominal surgery.

♦ ♦

C. E. Purslow, M. D.:

Should a *douche* be used as a routine *during the puerperium*? This question has been discussed many times and is not yet decided. My own rule is that if the nurse is thoroughly capable and can be relied upon to administer a *douche* carefully, then the patient may with advantage be douched after the first forty-eight hours; but if there is any doubt as to the nurse's ability or attention to aseptic principles, then the patient is far safer without the *douche*.

I have almost always found that patients have stated that they have derived comfort from the use of a vaginal *douche* during the *puerperium*, and they have liked it.

♦ ♦

Howard R. Chislett, M. D.:

The choice between suspension of the uterus to the abdominal wall; fixation in the same position by denudation of the peritoneum, or one of the varied operations upon the round ligaments, must ever depend largely upon the operator's individual experience. I say without hesitation that *ventro-suspension* has given me the largest percentage of successes, consequently I employ that method most frequently and especially where there have been adhesions, where the uterus is rather large and heavy and where there has been a prolapsed condition complicating the retro-displacement. The main objection raised

against the operation, that it is unnatural and complicates future pregnancies, may be met with the response that it is certainly not so unnatural as the condition you operated for, that it is successful in more cases than any other yet devised, and that the latest report from Johns Hopkins Hospital recording four hundred and forty-five cases states that "the great majority of patients have no adverse symptoms referable to the suspension during pregnancy or labor." After eleven years' experience Beyea, of the University of Pennsylvania, states that never to his knowledge has the operation of ventro-suspension complicated labor or induced an abortion. Von Guerard cites fifty-seven cases of labor following ventro-suspension with fifty-one normal and five instrumental deliveries. In two there were recurrences of the displacement. The discrepancy of one case I cannot account for.

Fixation of the uterus obtained by denuding the posterior portion of the upper part of the fundus of its peritoneal covering and suturing it to the part of the anterior abdominal wall also denuded of peritoneum is called for only in those extreme cases of retro-displacement or complete procidentia where hysterectomy is refused; where the child-bearing period is passed, or where other methods have failed and the health of the mother is considered far more than the possibility of future offspring. The operation is almost uniformly successful and is a great boon to those suffering especially with the bladder complications.



Stuart McGuire, M. D.:

If a *displacement of the uterus* produces symptoms justifying correction, then the logical, but not always practical method of procedure is to find the cause of the displacement and remove it. If due to a sudden jar from a fall then the uterus should be replaced bi-manually, and the patient confined to bed for several days in the knee-chest or Sims' position. If due to increased weight from endometritis, from infection, or to subinvolution from laceration of the cervix, then the uterus should be curetted or the tear repaired. If due to diminished support from below from laceration of the perineum, then the parts should be restored by plastic operation. Unfortunately, most cases of posterior displacement are seen at a date when the primary cause has ceased to be active, and when pathological

changes have become anatomical alterations. A removal of the exciting factor is then insufficient to correct the trouble, and it is no longer a theory but a condition with which we have to deal. Failing to effect a cure by the correction or removal of the primary cause three different plans of treatment may be followed, either singly or combined, namely, the postural treatment, or an effort to correct the displacement by gravity; the mechanical treatment, or an effort to correct the displacement by tampons or pessaries; and the surgical treatment, or an effort to correct the displacement by operative intervention.

The postural treatment is carried out by replacing the uterus bi-manually, and maintaining it in the correct position by confining the patient to bed for weeks or months in the knee-chest and right or left Sims' position. The plan has only a limited field of application, but it is surprising to find what little discomfort it entails and what good results often follow its judicious and faithful trial. It should be employed where the displacement is uncomplicated, where surgical intervention is declined or contraindicated, and where a modified form of "rest-cure" will probably improve the patient's general condition.

The mechanical treatment consists in replacing the uterus, and endeavoring to retain it in the correct position by the use of tampons or pessaries. This plan is indorsed by the leading authorities, and is the one most generally resorted to by the profession. Personally, I never use pessaries when I can help it. I am not in a position to denounce pessaries as frauds, but I am in a position to confess that as a pessary fitter I am a failure. Repeated and conscientious efforts have not enabled me to accomplish the feat of legerdemain necessary to securely and permanently balance a wabbling womb on a rocking support.

Last summer I saw the demonstration by Dr. C. H. Mayo of a new surgical operation for retroversion. It combines all the practical advantages of, and does away with the objections to, both the Alexander and ventro-suspension operations. I immediately determined to adopt it, and during the past winter I have performed it on twenty-nine patients with most satisfactory results.

The operation corrects the displacement by shortening and suturing the round ligaments, and thus avoids the formation of

an abnormal attachment. It accomplishes this through a single median incision which permits of thorough intra-abdominal examination. It is not "blind surgery" like Alexander's, nor "unnatural" surgery like ventro-suspension. The patient is placed in Trendelenburg's position, and a four-inch incision is made above the pubes. The hand is inserted and carried into the upper abdomen to explore the region of the gall-bladder. As the hand is withdrawn, the cecum is brought into the wound and the appendix examined. The tubes and ovaries are next palpated and dealt with as required. The uterus is now placed in normal position, adhesions being broken up if present.

Finally, come the steps to shorten and suture the round ligaments. The abdominal incision is inspected, and the cut edge of the anterior fascia of the rectus muscle located. The overlying structures are separated from it, the blunt dissection being carried outward until the aponeurosis of the external oblique muscle is exposed opposite the opening of the internal abdominal ring. A half-inch incision is made in the aponeurosis immediately over the ring. A pair of curved artery forceps is now taken, and the points introduced through the incision in the aponeurosis and through the opening of the internal ring. The side of the abdominal incision is then raised with a retractor and the ends of the forceps can be seen beneath the peritoneum between the folds of the broad ligament. By elevating the handles of the forceps, and carrying them outward and making a gentle pressure downward and inward, the point is made to pass along the side of the round ligament. When it comes to within one and a half or two inches of the cornua of the uterus, it is pushed through the peritoneum and is made to grasp the round ligament. By withdrawing the forceps the round ligament is doubled on itself, and the loop is made to present at the opening in the aponeurosis of the external oblique. It is fastened at this point by two sutures of silk or linen. The same procedure is repeated on the opposite side. The abdominal incision is then closed with tiers of catgut sutures. The operation takes less time to perform than it does to describe it.

♦ ♦

E. J. Maclean, M. D.:

I will describe a case of *chronic inversion* of the *uterus* of puerperal origin. The patient was a woman, aged twenty-nine, who had had three or four miscarriages and five full-

time normal labors. At her last confinement, two and a half months before she came to the Infirmary, the patient had been treated by an unskilled midwife; the placenta had been retained, and when it had been finally delivered, as a result of traction applied to the cord and of other manipulations, free post-partum hemorrhage accompanied with some collapse and local pelvic pain had occurred. The patient rallied from the collapse, but from that time she had continued to ~~lose blood~~ lose blood in varying amounts, and on admission to the infirmary she was profoundly anemic.

On examination per vaginam there was found a smooth, elastic, pear-shaped swelling, about 2 3-4 inches in length, springing by its narrower stalk from the antero-superior wall of the vagina, and presenting a slightly raised, collar-like rim on its circumference at the level at which it became continuous with the vaginal walls; there was no opening into which a sound could be passed. Bi-manually, the body of the uterus could not be made out in the pelvic cavity, and a cup-like depression was felt, which led to the vaginal tumor.

The diagnosis was that of inversion of the uterus. There was no ulceration of the inverted mucous membrane of the uterus, but even the gentlest handling caused considerable hemorrhage, and a promptly effective treatment appeared to be indicated.

The patient was prepared for operation by either the vaginal or abdominal route, and was deeply anesthetized. Steady centripetal pressure was first applied to the uterus by the hand on the vagina, and by this means the bulk of the tumor was somewhat diminished. Ordinary bi-manual pressure and counter-pressure was next tried, but proved ineffectual. Volsellæ were now fixed in front and behind in the middle line, at the level of the rim which represented the junction of the cervical and vaginal mucous membrane, and pressure applied evenly as against these two fixed points caused a further demarcation of the rim, so that it became possible to affix four volsellæ at equal intervals on the cervical lips. While assistants held these volsellæ, by steady, forcible pressure with my thumbs over the fundus and the remaining fingers of both hands supporting the lateral walls of the uterus, I was able in the course of a few minutes to bring about the reinversion of the uterus. The cavity of the uterus was douched with hot iodine lotion;

iodized phenol was applied to the mucous membrane, a tight pack of sterilized gauze was inserted, and a silkworm-gut suture was applied at either angle of the os uteri, the two last operations being undertaken in order to prevent recurrence of the inversion. The patient made an uninterrupted recovery. With respect to the treatment adopted I have never used a repositor, and in this case the tendency to hemorrhage formed a contraindication. Amputation was out of the question, because there was no local sepsis, sloughing, or ulceration. If the treatment above described had failed I intended to open the abdomen and to divide the "cup" posteriorly from the peritoneal aspect as deeply as might be needed for reposition by bi-manual manipulation. An example such as the present one of successful application of taxis in chronic inversion suggests the advisability of giving this treatment a fair trial before resorting to anterior or posterior colpo-hysterotomy or to abdominal section.



Wm. Gillespie, M. D.:

No operation of equal importance has received such inadequate attention at the hands of writers as the *forceps*. In every text-book on obstetrics we find rules laid down for its use, and warnings against an abuse of its powers, but in no work with which I am acquainted has the author even attempted to lay down what may be called an adequate operative technique.

When the head is arrested at the pelvic brim the problem presented is a complex one, and merits the most careful consideration. That there may be no misunderstanding my position, I will freely admit that the percentage of cases calling for artificial assistance at the brim is quite small. The man whose only experience in obstetrics comes from the cases arising in his private family practice will seldom be confronted by this problem, but he who begins to do a consultation practice finds them with such startling frequency that their mastery becomes the most important element in his professional work.

That delay during the first stage of labor is by no means as dangerous as that occurring when the head is in the pelvis is well authenticated, but no more pernicious doctrine can be promulgated than that delay at this time is devoid of danger both to mother and child. The percentage of cases of exhaustion is much smaller than we find at a later stage of labor, but

they do occur, and when exhaustion does occur and the persistent contractions of Braxton Hicks come on, the problem is much more grave than in similar cases occurring with the head in the pelvic cavity.

There are a number of diseased conditions which may threaten the mother with menace more direful than forceps at the brim in skillful hands. Among these may be mentioned cardiac disease, exophthalmic goiter, and the nephritis of pregnancy. In any of these conditions the exhaustion incident to prolonged labor will soon overshadow in menace to life the skillful use of forceps.

If, from any cause, we are compelled to render artificial assistance when the head is in or above the brim, the mode of procedure must vary with the exigencies of the individual case. When excessive lateral obliquity of the uterus has caused the head to override the brim and find lodgment in the flare of the false pelvis, we can usually, by manipulation through the abdominal wall, push the head into the pelvis and convert the case into one of medium forceps. When a multipara with pendulous abdomen has maintained the upright posture, the dorsal posture or the abdominal binder obviates the difficulty, and all instrumental assistance can usually be avoided.

It is in cases where there is disproportion, positive or relative, because of the position of the head, that discrimination in the mode of procedure is imperative. In such cases even the man who weighs the problem with painstaking care will frequently meet with disaster, while he who follows blindly his preference for forceps or for version, without regard to the minor mechanical problems of the individual case, will leave behind him a trail of fetal mortality and maternal morbidity.

With the head arrested in the brim of the pelvis the first alternative which suggests itself is time. Shall we wait to see what nature can do? The answer must usually be yes, and in support of the judiciousness of this position stand out two important facts:

1. The natural forces of the woman will frequently accomplish delivery in safety where no artificial means at our command can do so.
2. Under the gradual periodic exercise of uterine force molding of the fetal head is much better accomplished than by forceps or version, and the reduction of the diameters of the

head may progress to a greater degree without damage to the fetal brain.

These facts are indisputable, but sometimes artificial assistance is far superior to natural efforts. It therefore becomes the duty of the obstetrician to formulate rules for waiting, as well as rules for interfering, for we are no more justified in a course of blind expectancy than we would be in one of pernicious activity.

If the head is above the brim after labor has set in something is wrong, and it is the duty of the attendant to find it. If after a few hours of even moderate pains the head has not entered the pelvis, something is radically wrong, and we must find it or stand convicted of incompetency to intelligently supervise that case. If the consultant was sent for at this time, while the woman was yet vigorous and pains active, and before the life of the child was threatened by prolonged labor, a large percentage of our difficult cases could be rendered perfectly normal by finding the reason why nature could not bring her expulsive efforts to bear upon the fetus to mechanical advantage. By early diagnosis of the exact mechanical relations we are placed in possession of the knowledge necessary to the proper utilization of nature's efforts. If the occiput is posterior—and this is by far the most common cause of delay—it should be rectified by suprapubic manipulation. If this method fails it is a truly conservative procedure to introduce the hand, if necessary, to rectify the position.

Pure conservatism consists in preserving and utilizing the natural powers of your patient, and when the uterus is expending its efforts without accomplishing definite results it is good practice to lend a hand before exhaustion supervenes. The earlier in labor the occiput is brought forward the less the probability of the subsequent necessity for forceps delivery. The more vigorous the woman when the occiput is brought forward, the more deeply engaged will the head be when the necessity for artificial delivery occurs, and therefore the simpler and less dangerous the operation. If the occiput, on being brought forward and released, again goes backward, it is well to rotate the head through half instead of one-fourth of a circle, when it is sure to be retained. If the waters have ruptured early, or there is undue rigidity of the cervical structures, artificial dilatation may be used early instead of waiting for ex-

haustion. Under such circumstances it is the first third of the dilatation which is most difficult. After the head begins to wedge itself down into the cervix progress is much more rapid, unless the forces of nature have been wasted in useless efforts previous to this time.

When the head presents transversely we have contraction of the conjugate, or excess of the sacro-vertebral angle, and quite frequently both. Slow first stage of labor is the rule, and expectancy here finds one of its greatest fields of usefulness, but it should be intelligent expectancy. If the woman suffer greatly from the nagging pains, and especially if she be of the nervous, hypersensitive type, she should be kept in reasonable comfort by chloral or even opiates, in order that she may retain sufficient strength to effect ultimate engagement, if not delivery.

It would be a task to even enumerate all the alternative measures which may at times be utilized in obviating the necessity for forceps at the brim. Each case presents its own peculiar problem, but these hints must suffice. If such alternatives fail, the head is yet unengaged and delivery must be effected, it is not a question to be treated statistically, but mechanically. Of what use are figures showing the average percentage of fetal death by high forceps and by version? If one method shows a smaller percentage, what consolation is that to the mother if her child be lost? The problem we must undertake to unravel is this: considering all the ascertainable factors in this mechanical problem, what method promises the best chance of delivering a living child, and what method is least dangerous to the mother? It is impossible to draw hard-and-fast rules for the management of the various classes which contribute to make up our high forceps cases. The method of choice will differ in the hands of different men according to their beliefs and according to their operative ability.

If the necessity for delivery presents and the head has not yet engaged, the choice of method of artificial delivery demands serious consideration. The two methods, version and forceps, have their advocates, and their claims are sometimes hard to reconcile. That no misunderstanding may exist, and no useless digression occur in the discussion, I will state specifically that I propose to keep in mind the possession of reasonable skill and experience on the part of the operator.

That the inexperienced man, if forced to act alone, will be wise to choose version I will freely grant, but in no other surgical operation do we lower the standard to meet the abilities of the inexperienced, and we should not here.

Those who attempt to dismiss this subject with the statement that no one would resort to forceps with the head above the brim, have not only failed to catch the drift of the advocates of forceps, but have neglected alike to heed the concessions of the versionists.

It may be stated as a general proposition that any condition which predisposes to slow delivery of the after-coming head is a contraindication to version. It will not be judicious to do version in a woman's first labor, therefore, or in cases of general contraction of the pelvis, unless compelled to do so. The chief indication for version is found in cases where the pelvic contraction is limited to the conjugate of the brim. In this class of cases Goodell advocates a method of delivery of the after-coming head, the first step of which consisted of traction in the axis of the inferior strait. With two fingers of one hand astride the neck and the other hand grasping the feet, the forward traction tends to cant the head and bring the posterior parietal in contact with the promontory above the incompressible base. Without relaxing your traction, but rather increasing it, the direction of your traction is suddenly changed backward, the hand grasping the neck being depressed until, if possible, the line of traction is posterior to the axis of the brim. Matthews Duncan subsequently showed by experiments that by direct traction through a contracted artificial brim this same mechanism occurred, but by Goodell's maneuver much time is saved, and time in this problem is synonymous with fetal life. In this type of pelvis Goodell claims that whenever engagement is not effected in half an hour by instruments, version is indicated. With this opinion I am in full accord, but with his contention that it is impossible to apply the blades to the sides of the fetal head I am prepared to take issue.

With the head high in the pelvis it is sometimes impossible to make a regular application of the blades. If, then, we reason that because it is sometimes impossible to apply the blades regularly high in the pelvis, it is always impossible higher up, we use the line of argument of the general profession on this subject. There are conditions present, however, which tend to

render it easier to bring a blade anterior to the head above the brim than it would be after engagement has been effected. The head presenting transversely tends to that side of the pelvis toward which the occiput points. This Goodell recognizes, and points out the mechanical advantage accruing from the larger bi-parietal diameter, finding ample space to one side of the promontory and the narrower bi-temporal diameter being nipped by the conjugate. What he and all others have failed to see is that this movement of the head toward one side of the pelvis leaves an open space at the other side, through which the blade finds an unobstructed passage. Fortunately, this open space is upon that side which must be traversed by the blade which is to be applied to the anterior side of the head. If the occiput is to the left, the left blade is introduced upon the flat between the head and the posterior lip of the cervix and passed upward by depressing the handle toward the floor. The right blade is placed upon it between the head and the posterior lip of the cervix, its curved tip pointing to the right side of the pelvis. It is then gently manipulated spirally around the forehead and up under the pelvic arch. The blades are now readjusted so that the handles are as nearly perpendicular to the vault as possible. The problem is thus seen in the mind's eye. The blades are placed, one in the hollow of the sacrum, the other under the pubic arch. The handles should be diverted somewhat toward the left thigh of the mother, else the pelvic curve of the blades will carry them too far toward the left of the pelvis. Even with this precaution they will still be to the left of the promontory. The head is not flexed and may be slightly extended. The blades grasp the head about the bi-parietal diameter. Grasping the handles firmly, you make traction anteriorly, continuing your traction until the head is pulled firmly against the brim. "Without relaxing your traction, but rather increasing it," to quote Goodell, you suddenly move the handles backward toward the sacrum. By this method you just as certainly cant the head past the promontory as by Goodell's method of delivering the after-coming head. The head is indented by the promontory upon its posterior side, and enters the brim with a sharp snap, so distinct that the operator fears for a second that the blades have come off the head.

This method possesses one distinct advantage over version, namely, having canted the head past the obstructing conjugate, there is no hurry, while with Goodell's maneuver all must be done in a few minutes or the child is lost. There is one precaution, however, which must not be lost sight of. The tips of your blades rest behind the ears of the child, and as long as the head remains unflexed the hold is secure, but as soon as the brim is passed flexion ensues, and any traction after this will result in them gliding over the occiput, and perhaps seriously injuring the soft parts of the mother. You must therefore pull with the arms alone, and be ready to immediately relax your traction when the snap of entrance is felt. Since devising this procedure some years ago I have never failed to effect the entrance of the head in such a case in a small fraction of the time granted by Goodell for the tentative trial of forceps, and have therefore not used version in such cases. If this manipulation was to fail I should then employ Goodell's form of version.

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F. B. Carleton, M. D.:

I wish to comment on the influence of *mercuro-cataphoresis in diseases of women*. In cases where one or both ovaries are affected, and where various neurasthenic symptoms disclose themselves as a result of pelvic mischief, I advise that previous to resorting to an operation, the galvanic current should be applied locally. My method is as follows:

A very large electrode connected with the negative pole is applied to the abdomen, while the positive electrode of copper or zinc (round or egg-shaped), with a long insulated stem, is applied to the cervix. This electrode is thoroughly coated with mercury. After a salt douche has been administered to the patient, the positive electrode is introduced into the vagina with or without the use of a speculum, and a current ranging from 25 to 75 milliamperes is used. The oxychloride of mercury which is formed at the positive electrode by electrochemical action during the passage of the current is carried and forced by that current directly into the diseased parts. I maintain that two distinct actions are obtained: first, the sedative, stimulating, and tonic effect of the electric current *per se*, and, secondly, the antiseptic and astringent action of the oxychloride of mercury, which is actually forced into the tissues in its nascent state. Should operation be afterwards deemed

advisable, it will be found that the previous electrical treatment has prepared the patient and made her more fitted for the strain of operation.



J. W. Wood, M. D.:

Since it is not possible, clinically, to separate *vomiting in the pregnant state* into two varieties, physiological and pernicious, much of the treatment which burdens the text-books may be considered useless, because most of it is specifically commended for one or the other variety. The whole object of any and all methods of treatment may be summed into the following few words: Exclude existence of complications; remove sources of peripheral irritation; lessen irritability of the nerve centers. Such a view of the matter must impress upon anyone the comparative uselessness of many medicines and methods advised.

No routine treatment can be advised for any case. Every attempt at alleviation must consider the inclusion of dietetic, hygienic, medical, and surgical measures. It is very important, in view of the high mortality attending severe cases, that the surgical features are not kept too long in the background. The life of the mother, by all values estimated by man, is of more importance than the life of the fetus; yet if operative interference be too long delayed, the maternal life is jeopardized and both lives may pay forfeit to the temporizing.

The dietetic treatment includes the exclusion of the unsuitable articles of food, and, in some cases, rectal alimentation. An absolute diet, permitting water only, and covering a period of one to seven days, at the outset of any severe case, may do much good.

Rectal feeding is seldom well borne, often provoking a severe diarrhea, which is more exhausting than any deprivation of food could be. In the milder cases, benefit often follows a light lunch of a cracker, toast and tea or milk just after wakening and before raising from the pillow, the patient lying flat on the back for fifteen to twenty minutes afterwards before making any effort to rise.

The hygienic efforts include absolute cleanliness at all times, lavage of the bowels and in occasional cases, of the stomach, a mild electrical current applied over the neck and epigastrium and, in the worst cases, confinement to bed in a quiet and dark-

ened room. It is a peculiar fact that moral control over the patient has often a salubrious effect; the emphatic assertion that a certain medicine will stop the vomiting often resulting in a complete cessation.

Even a vaginal examination, accompanied by elaborate preparations and precautions, is in many cases sufficient to produce a decided beneficial effect on the symptoms. Due attention is paid, of course, to the emunctories.

In the way of medicinal treatment, it is enough to say that drugs except those which aid in maintaining perfect functional activity of the skin, kidneys, and bowels, or which aid in elimination or lessening of irritation, are frequently useless.

If the irritation in the stomach proceeds to development; if a true gastric catarrh, the drug stricture is removed, for it is then necessary to treat the catarrhal condition. Any complication, as, for instance, nephritis, may, at once, render the use of drugs imperative; it is the uncomplicated, severe cases which seldom close well under drugs alone.

The surgical treatment, ordinarily, is understood to refer to the induction of abortion, but we think it preferable to include all manual intervention. This would include typical applications to diseased cervix or os uteri; depletion of nabothian cysts by puncture, insertion of vaginal tampons when necessary, replacing of a displaced uterus, and when necessary, the insertion of a pessary to maintain the proper position, and in severe cases, dilatation of the cervix, though it is to be remembered that this often results in the induction of an abortion. Finally, if emaciation becomes extreme, or if feeble pulse indicates flagging heart power, or if epigastric pain is not reliable, or if the vomited matter becomes "coffee ground" in character, and if the eliminating of urea sinks to a low ebb then abortion must be induced to save the mother's life.

Abortion should never be undertaken without a consultation of several brothers in practice and should be delayed until the symptoms above outlined warn that no further temporizing will be tolerated by an exhausted system, and yet it must be undertaken while the mother possesses a sufficient reserve strength and vitality to stand the operation itself and to rally afterwards. Probably few other emergencies arise in practice where cooler heads and more mature judgment are in such great demand.

W. Sinclair, M. D.:

I will discuss the operation of *paravaginal section*, an operation which is an alternative to vaginal hysterectomy and to abdominal hysterectomy.

In extended operations for cancer the immediate mortality from vaginal hysterectomy has been brought down to a very low figure as compared with that from abdominal hysterectomy, but the frequency of relapse after vaginal hysterectomy caused a reaction against this method and in favor of abdominal hysterectomy. Relapses have, however, proved frequent after the abdominal operation also. Paravaginal section was introduced with the object of extending the percentage of operability in cancer of the uterus, of obtaining better remote results, and of at the same time avoiding the dangers inherent in abdominal hysterectomy. It may be claimed in favor of the paravaginal operation that it is easy to perform; the surgeon can count with certainty upon being able to complete the operation; accidents to the bowels, bladder, and ureters can be avoided with ordinary care; hemorrhage can be controlled in the early stage of the operation by pressure forceps, and post-operation hemorrhages can be entirely prevented; by suturing and pressure, the sides of the extensive wound can be kept together, and healing be obtained per primam; the operation is the safest of all the methods of hysterectomy when the vagina is narrow or the parametrium is involved.

I wish to especially call attention to the advantages of the operation in non-malignant cases. For diseases which cause chronic bad health without danger of a fatal result, a comparatively safe and easy method of operative treatment is essential, and by paravaginal section such a method is supplied. The object of the incision is to obtain free access to the diseased parts, and if care be taken to avoid injury of the sphincter ani and the rectum, almost every other structure may be cut through in order to obtain a free field for manipulation of the affected parts. The left labium is cut through, and with it the whole of the vaginal tube and vault; the paravaginal and pararectal tissues are laid open; the levator ani and coccygeus muscles are entirely or partially divided, as well as the cellular tissue of the ischio-rectal fossa. The first incision through the labium is made externally through the skin and subcutaneous structures of the perineum round towards the coccyx be-

low the level of the anus, so as to get the widest gaping of the wound.

The second part of the operation consists in making a circular incision round the vault of the vagina, so as to separate the portio vaginalis uteri, and gain access to the broad ligaments.

The third stage is the process of separation of the diseased uterus by ligation of the broad ligaments. Of my six cases, five out of the six patients were unmarried. Two of the cases were of atresia cervicis uteri, one of multiple fibromyomata of the uterus and retroflexion, one of fibromyoma of the uterus undergoing necrosis and sarcoma of the posterior wall, one of multiple fibromyomata, and one of malignant disease of the cervix uteri with pyometra and necrosing fibromyoma. The last case is an example of the value of the operation in an advanced case of malignant disease as a safe alternative to abdominal hysterectomy. The mortality in these cases was nil, and in most cases the patients made uninterrupted recoveries. In one case in which the patient was in poor condition there was a small slough in the ischio-rectal fossa, and in the last case during the healing of the wound there was a little sloughing of the fat and subcutaneous tissues at the outer extremity of the paravaginal wound near the anus.



Alfred S. Jaeger, M. D.:

For anyone to attempt, in the year 1906, to advocate a new or superior surgical dressing, may be to lay himself open to the ridicule of his confrères; but the fact that our perfectly clean operative cases still become infected, that wounds treated with superlative degrees of asepsis or antisepsis are every now and then found bathed in pus, convinces one that the last word has not yet been said, and we must still go on in our quest, like the immortal Wandering Jew, ever onward and onward, seeking for that which has not yet been found, perfect asepsis, or at least, better antisepsis.

It is in the belief that what I have to present is an improvement over the materials commonly used for surgical dressings and the like, that I have the temerity to walk where perhaps wiser heads would fear to tread; but as every honest endeavor is at least worthy of consideration, I ask your indulgence for what follows.

For the past two years I have made use of *asbestos fiber as a*

surgical dressing, and also for the making of pneumonia jackets, dry poultices, and continuous wet dressings, with most gratifying results, and am convinced that it is superior to cotton and gauze for such purposes.

As a surgical dressing it must at once appeal to one, for the reason that as heat is our most trustworthy sterilizing agent, we have here a material which is not sterilized indirectly by heat, but is cleansed by the flames themselves; which can be purged by fire at the side of the patient, without the danger of secondary handling contaminating it before it is applied to the wound. In hospital practice the dressings are generally re-sterilized each time the containers have been opened and their contents exposed to the air, or the dressings are supplied in individual packages; therefore, in this regard, there is no great advantage in using asbestos instead of cotton or gauze in hospitals. But in private practice, I would ask how many sterilize the jar of gauze or roll of cotton each time after using.

There is still another advantage which the asbestos has over the other dressings. Who of us has not become impatient and our patients made irritable and nervous by the annoyance experienced in removing a dressing which has become adherent to the wound? This does not occur when asbestos is used. When the dressing is moistened it takes up the water very readily and becomes slippery, and literally slides off the wound.

I have made for myself a small asbestos container, which is very simple and inexpensive, takes up but little room in one's bag, and does the work expected of it most admirably. It is constructed of a ten-cent corn-popper with detachable handle, and lined with asbestos paper. This can be placed right in a bed of coals, or directly over an oil, gas, or alcohol flame, and in a very short time the asbestos is thoroughly sterilized. Or it may be taken up with a forceps, kept for this purpose, held into a flame at the side of the patient, and applied directly from the flame to the wound, which, it must be admitted, is about as ideal a manner of obtaining an absolutely clean dressing as can be devised.

As a pneumonia jacket it will be found to possess greater hygroscopic properties than cotton. It is universally known that asbestos does not attract heat; i. e., when a heater or steam-pipe is covered with asbestos sheeting it will be found that after considerable time the asbestos covering is barely

warm. On the other hand, however, this material has the power of attracting moisture. If you will take an equal quantity of cotton and of asbestos, and wrap them about a common water pipe, you will find, after a time, that by weight the asbestos contains more water than the cotton. I have also demonstrated this by experiment on patients. In two cases of lobar pneumonia of about the same severity, I applied a dry cotton jacket, covered with oil-silk, on one patient, and on the other was placed an asbestos jacket of exactly the same weight, without an oil-silk covering. Taking them off after twenty-four hours, and weighing each carefully, I found that the asbestos jacket weighed considerably more than the cotton jacket. This has also been found true when using the material as a dry poultice in orchitis, etc.

When asbestos is used as a continuous wet application, I have found, by actual experiment, that it remains moist from two to three hours longer than cotton or gauze compresses of the same size. Probably this is due to the property before mentioned of repelling heat and attracting moisture.



R. R. Huggins, M. D.:

No disease of the female contributes more to the cause of this suffering than does *cancer of the cervix uteri*.

We are unable to treat any disease successfully unless familiar with its cause. So far, owing to our ignorance concerning its etiology, the treatment of malignant disease has been largely experimental. We are certain of but one factor in the production of malignant change in tissues, and that is irritation. This is evident, because it generally develops in tissues subjected to continuous irritation. For this reason the surgeon now advises the removal of pathological conditions in certain organs where he fears they may act as irritants to the tissues, and thus eventually bring about epithelial proliferation.

The following facts concerning cancer seem to be established:

(1) That it begins as a benign growth; (2) that there is a true precancerous stage in which removal is a sure means of relief; (3) that the disease is absolutely local in its beginning; (4) that there is a varying degree of malignancy, some growths tending to return more readily than others; (5) that as a rule tissues are more susceptible to its development at the age when

atrophy and degeneration take the place of the building-up processes.

Out of a series of six hundred examinations of women who had given birth to two or more children, I found pathological conditions of the cervix in five hundred and twenty. Many of these were slight, but out of this number three hundred and sixty presented lesions sufficient to warrant treatment. The lesions consisted of lacerations, papular and follicular erosions, and endocervicitis.

During fourteen years' practice, I have observed four cases of carcinoma of the cervix developed from two to four years after I had made my first examination and warned the patient about neglecting the repair of these chronic conditions, which though suspicious had not as yet developed malignancy.

The fact that cancer develops in the majority of instances, in women who have given birth to several children or those having had instrumental deliveries, speaks very strongly in favor of traumatism as a predisposing cause of this condition and when we consider that cancer of the cervix seldom occurs in women who have not had children, that nearly all the victims of squamous-celled carcinoma of the cervix have had children, we cannot but conclude that the injuries incidental to labor have a potent influence in the development of this variety of cancer.

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N. F. Rowstron, M. D.:

As all cases of *rupture of the uterus* are worth recording, I append notes of a case. The patient was a thin sallow woman, aged twenty-eight, in her third confinement. I saw her first at 3.15 A. M., on May 21, when the condition was as follows: Pains every ten minutes, moderate in severity, membranes ruptured, os not quite fully dilated, breech just entering the pelvis, position left dorso-anterior. Evidently the second stage of labor had just begun. At 4.30 A. M. the pains were very strong, but the breech not advancing. Under light chloroform anesthesia the legs were brought down. By 5 o'clock the body was delivered, and after that steady traction was applied to the legs and body. At 5.15 A. M., pains very slight, traction ineffective. At 5.30 pains nil, pulse 100. An abdominal examination then made revealed below and to the left of the umbilicus part of a fetal head, the sutures of which could be easily felt through

the abdominal wall. Running diagonally across it from the right of the umbilicus to the left of the pubes was a thick band. It was obvious that the uterus was ruptured and the fetal head partly protruding into the peritoneal cavity.

The next point to be decided was whether delivery should be completed through the abdomen or through the vagina. As the occipito-frontal diameter of the head had not yet passed through the rupture, the vaginal route was decided on to avoid increasing the laceration. After steady traction and the application of forceps to the after-coming head a dead child was delivered at 6.30. It was hydrocephalic, and had a spina bifida. Preparations were then made for operation. At 7 o'clock the condition of the patient was bad—pulse 130; lips slightly blue. At 7.15, assisted by Dr. G. Pearcey, I made a median incision from umbilicus to pubes. After turning out a quantity of clot and fresh blood, examination revealed a laceration about 3 1-2 inches long in the left postero-lateral region, extending through the fornix and along the whole length of the cervix. Deep and superficial sutures were rapidly placed and tied. No attempt was made at cleaning out the abdominal cavity, but a pint and a half of hot saline solution was left in and the abdomen closed. The condition of the patient had been getting rapidly worse, and she eventually died four hours after the operation. The above appears to be a fairly typical case. The patient had a normal pelvis, but was badly nourished, and the child hydrocephalic. The rupture probably occurred about 5.15, and was no doubt due to over-distention of the lower uterine segment by an abnormally large head.

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C. D. Palmer, M. D.:

It seems we should consider the *physiology of pregnancy*, and try to understand what nature does in preparation for the coming event. We know that most women during pregnancy gain in weight. They fatten up, their blood supply is materially augmented—the red blood corpuscles are not necessarily relatively increased, but the amount of the white corpuscles is probably relatively enlarged. The fibrin of the blood is materially increased; so is the watery element. There is then more or less of a condition of hydremia and hyperinosis present. The various organs of the body are enlarged in volume—the liver, spleen, and particularly the heart. The heart very rapidly

increases in volume, an addition of one-fifth or one-sixth to its size, prior to pregnancy. It has to propel more blood to the various organs of the body, particularly to the growing uterus, and the developing fetus within, which as it nears the end of pregnancy may weigh seven, eight, nine, or ten pounds.

In reference to the neurotic states, nausea and vomiting occur in the large majority of pregnant women, and you cannot tell to how great an extent this will prevail in any case; women vary in this respect in different pregnancies. It is probably a reflex neurosis to the stomach from the uterus. Of course, while it is purely a functional disorder, and of neurotic origin, yet it may be continued so long, and so bad, as that it will result in structural changes in its mucous membrane. There are some women who do not have any nausea or vomiting at all during pregnancy. I have known of such instances, but recall one now where a woman had the usual nausea and vomiting in one pregnancy, and in the next she had none, but she complained of an intense pain in the two smaller fingers of the left hand. This continued for months. I think some of these cases of reflex disturbances show themselves in the kidneys. I think some cases of albuminuria in pregnant women are reflex, purely nervous in its character at first, before any pressure could be exercised by the gravid uterus on the kidney circulation.

We know that there are various psychoses which exist during pregnancy. I think, as a rule, hysteria exists relatively less in the pregnant than in the non-pregnant women. Neurasthenia is not very common then. Spinal irritation is not commonly found. This is to be explained by the fact of the increase in body weight, and the increased nourishing power of the pabulum of the blood. Chorea is perhaps one of the most annoying functional disorders we have in the pregnant state. I have seen it in a very bad form. I recall one case where it became so bad that it was necessary to induce an abortion. She was constantly in a state of choreic agitation, and most distressingly so. After the induction of labor, the choreic movements entirely ceased.

I am inclined to think that most of these cases of disturbed brain function, the so-called puerperal insanity which comes on after parturition, are the results of an exhausted state of the body at large. The loss of blood, after parturition, and the absence of the usual quantity of food, together with lactation, so deplete the nervous system that insanity may follow in one so predisposed. This condition is often best treated by an improvement of the general nutrition of the body at large.

Translations.

Freeing of the Arms in Turning the Fetus.—Apfelstedt (Berl. klin. Woch.) describes a method of freeing the arms in turning the fetus, which he considers improves the chances for the child considerably. He points out that the high fetal mortality after version is largely contributed to by the accidental extension of the arms, and the time which is lost in bringing them down. The freeing of the first arm takes up the most time, and if it is possible to avoid having to manipulate with the arms after the version has been carried out, the risk of asphyxia, etc., will be materially lessened. He further considers that the operator has not fulfilled his duty by merely turning the fetus, when this is indicated, either from a vertex or a transverse presentation; he should attempt to avoid all complications in the birth.

The choice of the hand with which he will turn, and the selection of the right foot, is of especial importance when the fetus has lost its fetal position, that is, its posture. The muscular tone of the fetus plays an important rôle. If the posture is maintained by a good muscular tone, the turning, even when the wrong foot is seized, offers a good chance for the child. Thus the result of turning depends partly on the fetal conditions (muscular tone, posture, etc.) and partly on the method and skill employed. In cases of prolapsed arm, he finds that after version the arm remains in a favorable position, and does not, as a rule, call for any further manipulations. He goes as far as to state that the occurrence of this "complication" improves the chances for the child, since the version is easy and leads usually to a smooth delivery. It is unnecessary to tie a tape around the wrist. His method for all cases depends on this fact.

First he carries out what he calls prophylactic freeing of the arm. The left hand, in the case of first presentations, is introduced into the vagina and through the os, while the right hand grasps the fundus. The membranes are then ruptured, and the nearest shoulder (in all cases save one) is sought, and the elbow and forearm of the fetus lie in the operator's hand. The arm is then passed over the front of the fetal trunk and brought down into the vagina, extended. It will then be placed abducted at right angles from the trunk. The arm is then held lightly for a few seconds in this position, and then the hand is again carefully introduced to seize the nearest leg—the same side as the arm—and this is likewise brought down into the vagina, the external hand assisting. As this is being done, the

left hand feels if the arm retains its favorable position, and if it threatens to go upwards it is corrected early. The version is carried out in all other respects as usual.

The exception mentioned above is met with in transverse presentations, with the abdomen toward the maternal front. In this case one should seek the upper and not the nearest arm, the latter being pushed upwards. The corresponding foot is then seized. The author has carried out this proceeding once when the fetus was in the first transverse position, and found it worked very well. While he does not feel justified in recommending the method without further experience of it, he thinks that it should be tried, and, if found as successful as he has found it and as it seems to promise, it should be adopted in regular midwifery practice. He considers the possible objections which could be raised, but finds them unimportant.

Movable Kidney in Women.—Heidenhain (Therap. Monats.) discusses the causes and treatment of movable kidney, an abnormality which he believes to be the one of most frequent occurrence in women. Except in cases of traumatic dislocation of the kidney, he holds that several factors are needed for the production of the disease. The causes often given—as, for example, the diminution of the fatty capsule of the kidney, the stretching of the capsule of the kidney as a result of distention of the organ at the menstrual period, loss of support to the kidney by a lengthening of the vessels, dragging upon the kidney by the ureter as a result of pelvic abnormalities—can be all excluded as sole agents in the production of the disease. Thus, the fatty capsule of the kidney is one of the last fatty tissues to waste in wasting diseases; it is found still present when operations for movable kidney are performed, and in children in whom no fatty capsule exists movable kidney is yet found. Again, it is unlikely that a physiological process like menstruation should result in distention of the kidney, and if such were one of its results the condition should be as frequently met with in the unmarried as in the married woman. The vessels of the kidney are normally inserted almost at right angles into the hilus, and are therefore unable to exert a strong vertical tension upon the kidney; and, further, in no other part of the body is it found that the organs are held in position by the tension along the blood vessels. The theory of the drag upon the kidney by the ureter is negatived, first, by the fact that the ureter does not pass straight from the kidney to the bladder, but allows ample substance for stretching; and, secondly, by a consideration of the great force which is experimentally found needful to exert upon the ureter to bring about any considerable change in the position of the kidney. Chronic disorders—such as emphysema with chronic cough, obstinate constipation with frequent and excessive changes in abdominal

pressure, etc.—will help to the condition, but cannot be sole causes of it.

The kidneys are supported by their anatomical position, which is slightly less stable in women than in men, mainly as a result of the abdominal equilibrium due to the elasticity of the abdominal walls and the tension within the abdomen. If this is lessened from any cause there follows an abnormal mobility of the kidney.

Aufrecht is of opinion that the right kidney is the organ in the female most liable to ptosis, and that nephroptosis is the beginning of an enteroptosis. He holds that ptosis of the kidney gives rise to the most severe symptoms when the organ first begins to sag downwards before the tissues have become accustomed to the drag upon them, and at a time when the kidney is not palpable. In considering the complications of movable kidney the author calls attention to the frequency of the occurrence of appendicitis. Edebohls, who found this complication in 60 per cent. of his cases, suggested a plausible explanation, namely, that the kidney in its changed position, by compression of veins between the head of the pancreas and the bodies of the vertebræ leads to venous stasis in the appendix, and so predisposes to appendicitis.

The operative treatment of movable kidney which the author has found most satisfactory is Schede's operation, in which a part of the fatty capsule is excised, the true capsule partially split up, and the kidney fixed so that its lower pole is just palpable below the twelfth rib. This operation, while good, is not perfect. Riedel has recommended a more elaborate operation, in which the kidney is again brought to the diaphragm, but the fact that after the operation the patient must lie in bed for three months is in most cases prohibitive.

In treatment by bandaging it is to be remembered that the organ cannot be in this way brought back to its absolutely normal position. The object to aim at is a diminution of the abdominal cavity in a direction from below up, from the symphysis to the diaphragm. By this means the displaced organs can be brought almost to rest, the tension upon the nerves is reduced, and the circulation improved. Teufel's bandage is in some ways a good one, but the one most strongly recommended by the author is Glénard's hypogastric belt. This belt is made of a middle piece of elastic, which reaches from the symphysis to the most prominent point of the abdomen; it has side pieces of flannel and buckles behind, and has in addition indiarubber thigh pieces; the belt needs careful fitting. The test by means of which the author decides whether in any case the belt will do good service is the so-called Féréol's hand grip. In this the patient stands up while the doctor grips the abdomen between the fingers and the palm of the hand. If the patient experiences relief from the pressure of the hand thus applied, then it

may be assumed that the belt is indicated for the case. The author has found the belt of especial use in cases in which there is a tendency to enteroptosis after removal of an abdominal tumor. A case is also described of traumatic dislocation of the kidney in which wearing the belt relieved the symptoms and recovery quickly ensued.

Retraction and Dilatation of Gall Bladder in Cholelithiasis.—Bazy (Bull. et Mém. de la Soc. de Chir. de Paris) is opposed to the view that retraction of the gall bladder in cases of lithiasis is caused by sclerosis of the coats of this organ, which he holds may coexist with extreme dilatation. He argues that what occurs in diseased conditions of the urinary apparatus occurs also in alterations of the gall bladder. The bladder of a subject of urinary obstruction may be abnormally large or small. When it is small and retracted, the bladder, it is held, was attacked by interstitial cystitis before the occurrence of any marked impediment to the flow of urine. On the other hand, when the obstruction is the precedent lesion, the bladder first dilates, and its coats afterwards become sclerosed. In the case of the gall bladder, when the inflammatory action starts in this organ it shrinks, and its coats at the same time undergo sclerosis, but when the excretory ducts are first attacked, or are more intensely inflamed than other parts of the biliary apparatus, the gall bladder is subject both to dilatation and to parietal sclerosis. Sclerosis, it is urged, is not the essential condition of retraction, as it may be associated with well-marked and, indeed, exaggerated dilatation of the gall bladder.

Treatment of Fractures.—C. P. Antonini (Il Policlinico,), with a view to obtaining perfect consolidation of osseous fractures by means of immediate reduction and accurate placing of splints, recommends and describes an apparatus invented by himself. This consists of fourteen pieces of aluminium, which can be conveniently packed up, and together suffice for the treatment of all the fractures occurring in the upper and lower limbs, and for fractures of the clavicle. They are to be padded with cotton-wool and kept in place by bandages, for the application of which they are appropriately pierced. The two plates, right and left, for application to a fractured clavicle are grooved to keep the ends of the bone in place. Six pieces suffice for the upper limb, and can be used for the right or left side. They are grooved to fit into one another, and a telescopic arrangement provides for the adjustment of the apparatus to the length of the injured part. For fractures of the lower limb extra pieces are provided, ingeniously arranged so as to strengthen and fix any selected part of the apparatus. Each piece is stamped with its name and an indication of the locality for which it is intended. The pieces are illustrated both

separately and in position, and the author adds a brief account with reference to his own methods of the treatment of ordinary fractures.

Surgical Treatment of Generalized Puerperal Peritonitis.

—Cyril Jeannin (*L'Obstétrique*) discusses in detail the various factors which influence the prognosis of such cases. Of 121 cases in which operation was carried out the percentage of cures was 49.5. If, however, only those cases which have been published in series be considered, the percentage of cures after operation is found to be 44.6. The later the symptoms of peritonitis appear after parturition the better the prognosis after operation; thus, of 58 cases in which symptoms of peritonitis appeared within the first ten days after confinement 46.4 per cent, recovered; whilst of 16 cases in which evidence of peritonitis was delayed beyond the second week, 13—that is, 81 per cent.—recovered. Generalized peritonitis is apparently much more frequent after a full-timed pregnancy than after abortion, and the prognosis after operation is more favorable with the latter class of cases; this, the author thinks, depends upon the fact that in the early months of gestation the uterus does not offer such an extensive bleeding surface for the invasion of germs and the possibility of infection occurring as it does at full term. Even in 24 cases of peritonitis the result of criminal abortion, 54.1 per cent. were cured by operation.

The commonest mode of production of puerperal generalized peritonitis appears to be by infection spreading from the uterus, without there being traumatic lesion of either the uterus or its appendages; of 83 such cases, operation was successful in 44.5 per cent. When the cause is a perforation of the uterus, the mortality after operation is great; in 15 such cases, only 4—that is, 26.6 per cent.—recovered. The most successful results were obtained in cases of peritonitis secondary to disease of the uterine adnexa; in 7 such cases all recovered. When the peritonitis takes the form of a subacute affection, appearing soon after parturition and rapidly spreading, no treatment is of any avail; the patient often dies within twenty-four or forty-eight hours. In 32 cases of diffuse acute peritonitis, 15—that is, 44 per cent.—recovered after operation. Better results were obtained in 40 cases of phlegmonous peritonitis with great effusion of pus and thick false membranes; 60 per cent, of these cases were successful.

In the generalized peritonitis with multiple purulent cysts, the latter being chiefly found either at the level of the uterine appendages near the ovary, in Douglas's pouch and iliac fossæ, or under the liver and around the spleen, the percentage of cures after operation was 80; such cases as these were, however, rarely found. Of the whole number of cases analyzed by the author, in only a few was a bacteriological examination

carried out; in 11 of 18 such cases the streptococcus pyogenes was found, 6 times in pure culture and 5 times associated with various other organisms; 8 of these cases were cured by operation. As the author points out, these figures show that streptococcal peritonitis is just as amenable to operative treatment as is the peritonitis caused by other organisms; the prognosis depends more upon the degree of virulence of the germ than upon its nature.

The causes of failure of operation, the author says, may be delay in operating, excessive surgical traumatism (this is especially marked when hysterectomy is carried out), the presence of a subacute hypertoxic peritonitis. If the patient lives beyond the fourth day after operation, recovery generally follows. From the frequency in which in fatal cases peritonitis is the only lesion found, the author strongly favors the treatment of these cases by operation, and he rightly insists that in all such cases free drainage is essential for the successful issue of the operation. If from the statistics collected by the author one leaves out of consideration the cases of pelvic peritonitis and those cases of peritonitis cured by surgical intervention, it is found that all the cases of generalized puerperal peritonitis treated by medical means only die; from this fact and from the successes obtained by operation the author concludes that every case of generalized puerperal peritonitis, as soon as it is diagnosed, should be surgically treated.

Fever after Abortion: Suppuration of a Fibroid.—Mauclaire (*Comptes rendus de la Soc. d'Obst. de Gyn. et de Péd. de Paris*) recently operated on a woman aged thirty-two, who came under his care with symptoms of threatened abortion. She had miscarried five years previously, and since then had been regular and free from menorrhagia or intermenstrual hemorrhages. The period had ceased for about six weeks, when much clot and fluid blood came away; criminal abortion was suspected. A week later she was examined by Mauclaire, who defined a tumor of the size of a fist in the hypogastrium; it felt as tough as wood, and the fundus uteri seemed to lie distinct from it to the left. The cervix was short and the os patulous. There was no rise of temperature. Three days later a fetus of the second month was expelled. The temperature rose at the same time, and five days after the expulsion of the fetus the curette was used. Some placental tissue was removed; the uterine cavity lay entirely to the left of the tumor, which had not diminished in size. Soon pus began to escape from the uterus, and it was clear that the tumor was a new growth, not an irregular involution of the uterus. The uterus was removed, two months after the abortion, by a supravaginal hysterectomy. The ovaries and tubes were healthy. The patient, notwithstanding the suppuration, made a good recovery.

There was an interstitial fibromyoma which had suppurated ; no decomposing retained placental relics could be found. Routier, in discussing this case, noted that free suppuration was specially frequent in fibroids of small size undergoing spontaneous enucleation. In Mauclaire's case, however, this process was not observed. Diagnosis about the time of the abortion was not easy, and the free discharge of pus afterwards suggested that the swelling might have been a pyosalpinx emptying its contents into the uterine cavity.

The "Peripatetic" Treatment of Broken Legs.—Reclus (*Journ. des Praticiens*) describes the method he has adopted for the last twelve years in the treatment of simple fractures of the leg. It has the advantage that the patient so treated is able to walk about within a week of breaking his leg. Cestan (of Toulouse) has treated over 500 cases with the apparatus of Reclus described below, and finds that bony consolidation of the fragments is apt to occur ten days or three weeks sooner with it than when ordinary methods of immobilization are employed. The apparatus of Reclus is applied at once to the broken leg if there is no edema, or, if there is, a few days later when it has disappeared. The fracture is reduced and the back and sides of the leg and the edges and sole of the foot are enveloped in a light gauze and plaster-of-paris mold (seven thicknesses) ; the mold reaches up to within about an inch of the popliteal space, and holds the foot at right angles to the leg. The mold is applied while damp and fixed in the right position with bandages. Next day the rest of the apparatus is fitted on. This consists of two pads of gauze and plaster (ten to twelve thicknesses) 8 inches long and 3 inches wide, and a stout stirrup of round iron (shaped much like a modern croquet hoop) with the two ends beaten out flat. While they are moist, the two pads are placed longitudinally against the inner and outer sides of the knee, so that the lower 4 inches or so of each is in contact with the upper end of the mold. Then the stirrup is put in position, the two flattened ends embracing the pads and reaching as high as the top of the mold, and these ends fixed in position by a few turns of gauze bandage filled in with dry plaster and then wetted. Then the upstanding ends of the two pads are turned down over the ends of the stirrup and the few turns of bandage, and a few more turns of the plastered bandage are wound round the whole to consolidate it. The lower end of the stirrup projects about 2 inches below the sole of the foot. As soon as the apparatus thus applied has dried on, the patient may begin to walk about. Eight cuts are given illustrating the method of employing and applying the apparatus.

The Use of Forceps.—Demelin (*Jour. des Prat.*) discusses under what circumstances the application of forceps, being

apparently indicated, may be deferred or avoided. He deprecates the present teaching that the forceps are to be used very exceptionally; he considers a good pair of forceps, handled with care, slowly and gently, is an invaluable instrument. Many cases are met with in practice in which it is possible to temporize or even to abstain from their use; there are others in which it is absolutely indicated to save the life of the fetus or mother. Presentations of the shoulder or breech call for extraction by the feet, but when the head is fixed or engaged and the uterine muscle is retracted, instrumentation is needed.

The question whether to wait or to assist is often difficult to decide when there is no danger and the labor is normal, only tardy; this occurs usually in primiparæ who have been exhausted by the long period necessary for the dilatation of the os. After twenty to twenty-four hours of labor the pains become few and feeble, and the patient inclines to sleep; if then the fetal heart sounds are normal and there is no sign of meconium in the amniotic fluid it is wise to allow her to sleep for an hour or two. On awakening give an alcoholic drink, hot, with plenty of sugar in it, since sugar is a good muscular stimulant; follow this with a hot bath and a large dose of sulphate of quinine, and generally expulsive efforts will be re-established and terminate favorably. Hot douches do not reach the uterine muscle when the head is engaged and low down. When there is complete dilatation and the membranes are still intact they must be ruptured in an interval between the pains.

Some women, although vigorous, are nervous and cowardly when they feel the head on the perineum, cease from expulsive effort, and make no progress. A few whiffs of chloroform are sufficient to encourage the patient and produce the desired result. In primiparæ, if in spite of strong effort, the firm perineum prevents progress, it is permissible to add abdominal expression to the efforts of Nature. Mounting upon a chair beside the bed the palms of the hands are placed on the fundus, and when the contractions occur steady pressure is made upon the fetus in the direction of the pelvic outlet, the perineal resistance is thus overcome, and the application of forceps is avoided. In a case where there is full dilatation of the os and no advance is being made, examination may show the head lying in the transverse or oblique diameter, and not fully flexed. It is possible to assist the head to flex and turn; this is best done during the pains by introducing the first finger into the vagina, and during the contraction pressing upon the head near the anterior fontanelle in such a manner as to promote flexion, or it may be possible to get under the convexity of the occiput and draw it downwards. By pressing behind the ear in the direction required rotation is assisted; should the contraction cease before rotation is complete, the hand should be retained in position ready for the next pain.

Rotation and flexion having been procured, delivery will not be long delayed. There should be a limit to the time of waiting after the full dilatation has occurred. In uterine inertia often one may safely wait for five or six hours, but it is unwise to allow the maternal soft parts to be bruised too long between the head and the bony pelvis; there is a risk of edema, lacerations, and possibly of fistula resulting. When the pains are vigorous and no progress is being made two hours after full dilatation, interference is necessary. Such cases used to be left for ten or twelve hours until the fetal head was increased in size by a hematoma, and the difficulty of delivering resulted in a torn perineum, a vesico-vaginal fistula, and infection by lacerations. These fistulæ are now very rarely seen. In deciding whether to wait or to intervene, the position of the head in the cavity is an important point. As long as conditions are favorable it is well to temporize, but when symptoms of urgency arise there should be no hesitation in applying the forceps.

Urobilinuria after Chloroform Narcosis.—Gianasso (Rif. Med., May 19, 1906) has examined the urine of twenty-five children before and after anesthetization with chloroform (for periods varying from ten minutes to three-quarters of an hour) with the object of detecting the presence of urobilin. The urine was acidified with nitric acid and then shaken up with chloroform, filtered, the chloroform dissolved by absolute alcohol and the whole alkalized by ammonia, again filtered, and the filtrate treated with a saturated alcoholic solution of chloride of zinc. If urobilin is present, a greenish fluorescence appears, which varies in intensity with the amount of urobilin. The author found urobilin in all his cases after chloroform narcosis. The amount and duration of the urobilin reaction varied directly with the amount of chloroform administered. Urobilin was never detected for a longer period than eighteen hours after the chloroform had been given. Its presence is due to the destruction of red corpuscles caused by the chloroform, and may be some index as to the amount of that destruction.

Surgical Treatment of Subclavian Aneurism.—Savariaud (Rev. de Chir.) publishes an analytic review of 64 recently-recorded cases of subclavian aneurism, made with the object of showing the results of late modifications and of aseptic methods in the surgical treatment of this affection. Such treatment, it is held, has of late made great progress, and been attended by very satisfactory results; and, consequently, subclavian aneurism, which is an affection that is almost certainly fatal if left to itself, should, after the failure of proper medical treatment, be subjected to operative intervention. The author includes under the title of subclavian aneurism instances of

aneurismal tumors of the axillary artery extending above the clavicle.

In dealing, in the first place, with direct methods of operative treatment, the author refers to his collective cases, which indicate that in cases of traumatic aneurism of the subclavian incision of the sac, followed by ligature of the two ends of the vessel, is the method of choice. In discussing the value of extirpation of the sac he considers the question whether this, which at the present day may be regarded as the most suitable method in aneurisms of the limbs, is equally applicable in the case of the subclavian aneurism.

He quotes 7 cases, in most of which this method of direct treatment was applied after fruitless ligature or on faulty diagnosis, and after regretting that this has not more frequently been practiced as a primary and premeditated operation, arrives at the conclusion that it is not much more difficult than ligature, and, as it certainly excludes the risk of recurrence, is decidedly superior to that method.

In considering indirect methods of surgical treatment, in the first place, proximal ligature, the author states that the classical operation of tying the subclavian in its third part outside the scalenus muscle, though it is held rarely practicable, is a good operation, as it affords successful results, freedom from relapse, and is not likely to be followed by gangrene. Ligature of the second part of the artery has given equally good results, as the author's statistics show in 4 cases 3 of distinct recovery, and one in which considerable relief was, after a time, disturbed by the development of an aortic aneurism. Ligature of the third part is regarded by the author as a difficult and dangerous operation, which is liable to be followed by hemorrhage and by recurrence. In regard to ligature of the innominate, the author concludes from a study of reported cases that, notwithstanding the diminished risk of hemorrhage afforded by asepsis, this operation ought to be avoided if possible, as in the class of cases in which it was formerly thought to be indicated peripheral ligature may now be regarded as not only less formidable but as almost equally efficacious.

In cases of large fusiform aneurism occupying the whole of the depression above the clavicle, and sometimes extending on the one hand, into the axillary space, and on the other, to the sterno-clavicular joint, proximal ligature becomes very difficult or absolutely impossible, and then it is thought necessary to apply a ligature either to the axillary or to the extreme distal portion of the subclavian, or a double ligature to either of these vessels, together with the common carotid.

The author's tables show that single distal ligature either of the axillary or the subclavian gives results that are just as good as simultaneous ligature of one of these vessels and of

the common carotid. Hence, except in cases in which the innominate is involved in the aneurismal swelling, it is better, the author holds, to abstain from ligature of the carotid, which cannot be regarded as a safe operation. In concluding his paper the author arranges aneurisms of the subclavian artery in two groups; one in which the aneurismal tumor is situated outside the scalenus anticus, the other in which it extends to the inner side of this muscle. Aneurisms of the first group are essentially surgical affections, and should be treated either by extirpation or central ligature. The two methods are of equal value; but after a ligature has been applied extirpation may also be practiced if this operation be found to be free from difficulty. In the second group—that of combined extrascapular and intrascapular aneurisms—it is advisable to reject the central operation and to have recourse to the peripheral or Brasdor's method of ligature, the immediate mortality of which is almost nil, and the remote results are often very striking. In cases of large subclavian aneurism in which a cutting operation is contraindicated, injection of gelatine may, if properly practiced, be resorted to with a fair prospect of giving much relief, if not a complete cure.

Diagnosis of Extrauterine Pregnancy.—Rudaux (La Clin.), in discussing the diagnosis of ectopic gestation, points out that patients generally come for advice, not because they are pregnant, but because they experience symptoms and sensations dissimilar to those of previous pregnancies. The patient will say that her periods have ceased for some months (little importance need be attached to this point, unless menstruation has always been regular); she will describe the usual symptoms of nausea, vomiting, and enlargement of the mammae and abdomen, and possibly the fetal movements have been observed. In addition she complains of abdominal pain, either constant or intermittent, and of hemorrhages which seem to indicate a threatened abortion. In some cases the loss of blood is accompanied by the expulsion of a thick uterine membrane.

On examination the abdomen is found to be enlarged, and a regular and resistant mass is felt either in the median line or to the side of the abdominal cavity; the fetal heart sounds and the maternal souffle are often audible. This mass is immovable, and behind or close to it another tumor is evident, smaller and firmer than the first. By the vagina it is easy to differentiate between the large cystic swelling, situated partly or entirely in the pelvic cavity, and the enlarged uterus continuous with the cervix, which is softened, as is usual, in pregnancy. During the early months, although two tumors are palpable and the symptoms of pregnancy are certain, it is not possible to assert that the gestation is ectopic, for the uterus may be gravid, and the adjacent mass may be an ovarian cyst, or a subperitoneal

uterine fibroid. Also in some cases of extrauterine gestation the signs of pregnancy are not definite in the early months, and a decided diagnosis is not possible. In any case, whether it is ectopic or an ovarian cyst, or a fibroid, surgical intervention is necessary. Cases have been erroneously diagnosed as ectopic when the uterus was bifid or bicornuate. It is essential to make several examinations and to have recourse to chloroform should the examination be difficult.

Appendicitis and Typhlo-colitis.—Dieulafoy (Rev. de Chir.), in a recent communication to the Académie de Médecine, expresses his opinion that many people suffering merely from attacks of simple muco-membranous typhlo-colitis are improperly subjected to an operation for appendicitis which does not exist, and that such mistaken practice is on the increase. The patients in question continue to suffer, and all they have to show as the result of the operation is a cicatrix. Such errors, it is held, would not happen if the practitioner, instead of being guided by a "tendency" diagnosis, took some care, before assuming the presence of appendicitis, in making himself acquainted with the proper symptoms of this terrible affection.

A long experience has convinced the author that the predominance of pain in the right iliac fossa in the course of an attack of typhlo-colitis is almost always due to typhlitis and not to appendicitis. A genuine attack of the latter affection should, it is held, conform to quite a special clinical picture. The patient is suddenly attacked when in good health, and usually without any premonitory symptoms. The subject of entero-colitis, on the other hand, has been troubled for months, it may be for years, by intestinal disturbances. In this affection there is certainly pain in the right iliac fossa, but this pain is not so localized as in appendicitis, and, moreover, protective muscular contraction and cutaneous hyperesthesia accompanied by nausea, vomiting, and fever, are not well marked and constant symptoms. Each of the two affections, Dieulafoy holds, has its own distinguishing symptoms, a careful study of which will, we are told, enable the practitioner in a large majority of cases to make a precise diagnosis. Reference is made to eleven instances in his personal knowledge of muco-membranous entero-colitis simulating appendicitis, in which, at the operation, the appendix was found to be sound.

In conclusion, the author asserts that he remains a keen partisan of immediate surgical intervention in the treatment of genuine appendicitis.

Lipomatosis.—Fioravanti (La Clin. Med., An. xii, No. 12) discusses the pathogenesis of the various forms of lipomatosis. Speaking generally, he believes they are all ultimately due to

changes in the vasomotor and trophic nerves or nerve centers—that they are, in other words, tropho-neuroses. And it is well known clinically that some cases of lipoma start as angio-neurotic edema. Amongst the various exciting causes, traumata, especially if slight and repeated, must be reckoned as effectual. Chronic rheumatism, again, is a predisposing cause. Then there is a class of lipomata in association with definite nerve lesions (whether central or peripheral, bilateral in the first case). Of the generalized symmetrical lipomatosis, there are two chief groups: (1) Where there is little or no pain, and (2) where pain is a prominent symptom (*adiposa dolorosa*, or Dercum's disease). It is sometimes difficult to differentiate between these two groups; the most useful guide in classifying a case in group 2 is the presence of pain and marked asthenia. *Adiposa dolorosa* is more common in women, especially if alcoholic, arthritic, or neuropathic. What relation the thyroid, hypophysis, or other internal secretion glands have to the disease is uncertain, and treatment on these lines has not been generally successful. What influence they may have is excited by way of the vasomotor and trophic nerve centers.

Avoidance of Ruptured Perineum.—Rudaux (La Clinique) emphasizes the wisdom of disengaging one parietal protuberance after the other from the orifice of the vulva, and of making sure that the occiput is completely free from the pubic arch before allowing the head to extend so as to deliver the face. The necessity of suitable pauses during the expulsive process, so as to profit by the elasticity of the maternal tissues, is insisted on; and, in the case of instrumental delivery, restraining rather than making traction when the sub-occipital region has passed under the pubes.

Cancer of Ovary in Young Woman with Undeveloped Uterus.—Danel (Journ. des. Sci. Méd. de Lille) observed this condition in a young lady, aged twenty-five, of good general development, but she had never menstruated nor felt any molimen or pelvic pain. For eighteen months progressive emaciation was noted, with swelling of the abdomen, caused by a tumor which felt like a gravid uterus. Ovariectomy was performed, and a solid medullary mass, weighing nearly six pounds, removed, but portions of malignant tissue remained in the pelvis, where firm adhesions had to be separated, the cecum and adjacent part of the ileum were strongly adherent. The uterus and appendages opposite the tumor were entirely undeveloped. The patient died the day after the operation. Under the microscope the tumor appeared to be a typical lobular epithelioma.

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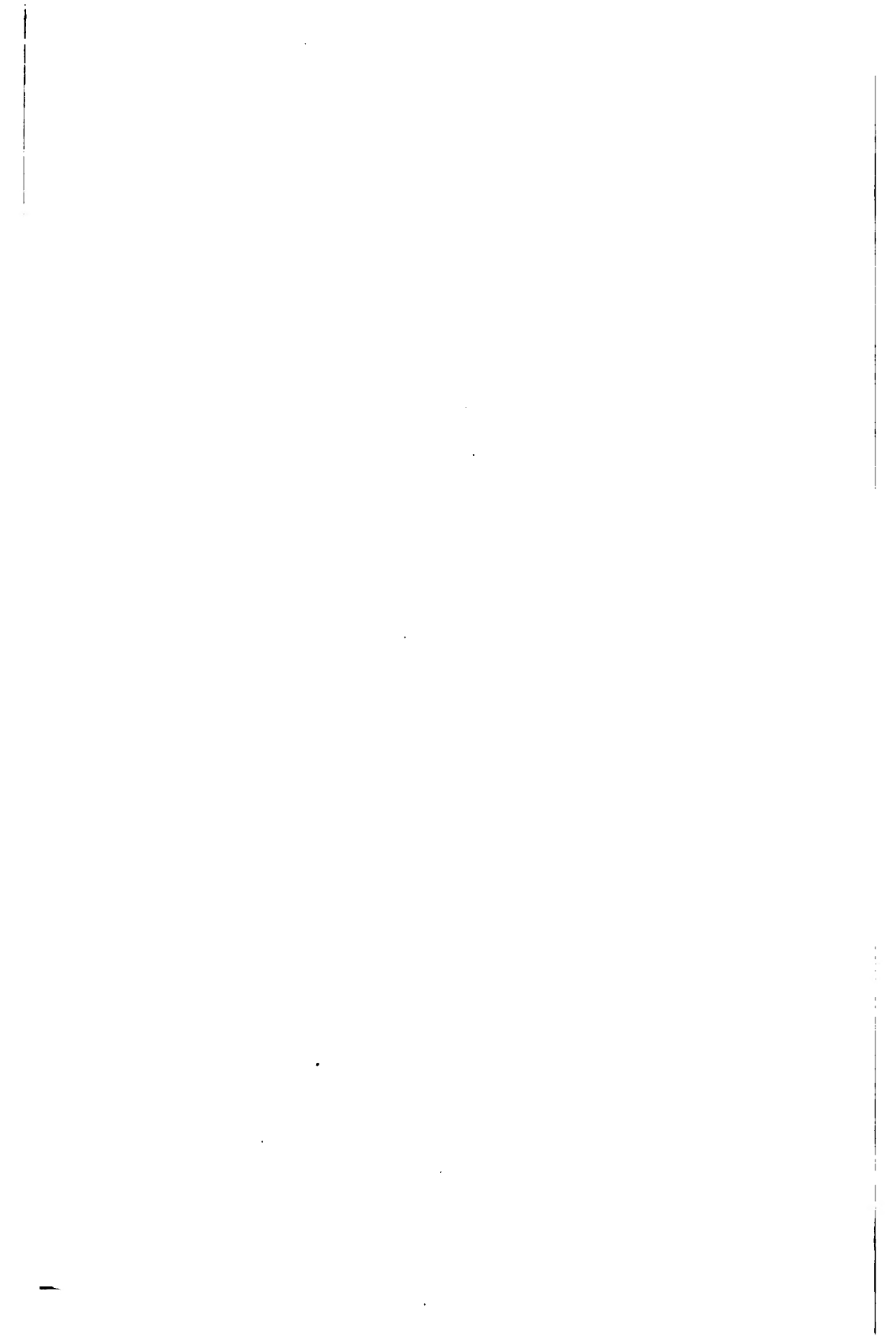
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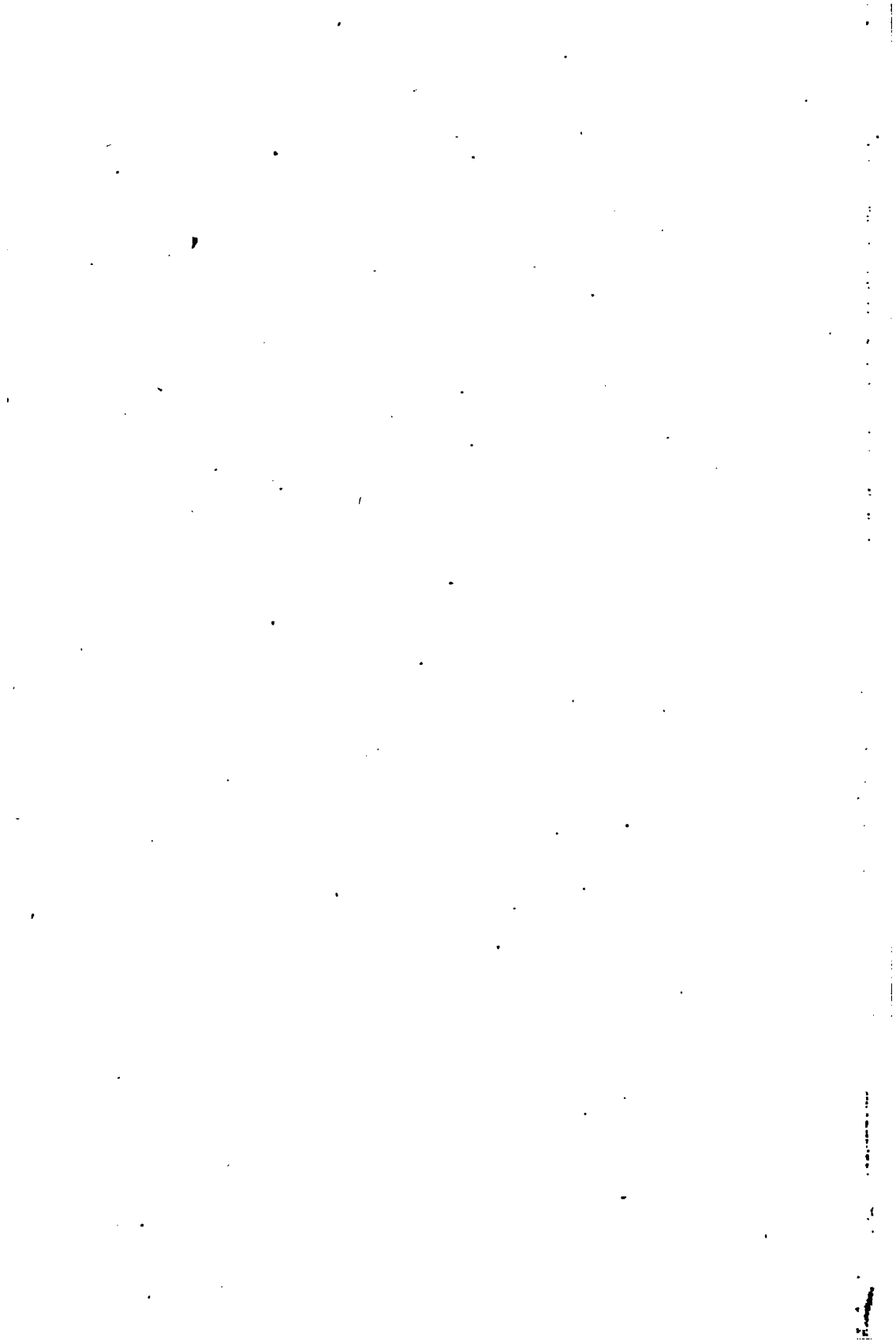
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